



New Day in Medicine
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**«АКТУАЛЬНЫЕ ВОПРОСЫ ФАРМАКОЛОГИИ: ОТ РАЗРАБОТКИ
ЛЕКАРСТВ ДО ИХ РАЦИОНАЛЬНОГО ПРИМЕНЕНИЯ»**

Бухара 6-7 мая 2021 года

НАУЧНЫЕ НАПРАВЛЕНИЯ КОНФЕРЕНЦИИ:

1. Фармакология и клиническая фармакология: Актуальные проблемы изучения и регистрации лекарственных средств; вопросы фармэкономики в Узбекистане и сравнительная характеристика с другими странами; современный взгляд на препараты растительного происхождения; персонализированная медицина – проблемы фармакогенетики в нашей республике и в других странах; современные принципы рациональной фармакотерапии; мониторинг взаимодействия и побочных реакций лекарственных средств, особенности фармакотерапии COVID-19.
2. Организация обеспечения лекарственными средствами первичного звена здравоохранения в условиях пандемии COVID-19 – кафедра ОЗОЗ БухГМИ
3. Разработка и анализ лекарственных средств в условиях пандемии COVID-19 – кафедра Медицинской химии БухГМИ.

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Участникам выдаются сертификаты на 12 часов.

Искренне рад приветствовать всех вас на 2 - Международной онлайн-конференции «Актуальные вопросы фармакологии: от разработки лекарств до их рационального применения» проводимое в партнёрстве с университетом GD GOENCO Индии и Курского государственного медицинского университета России.

Университет GD GOENCO Индии и Курский государственный медицинский университет России сотрудничают многими медицинскими вузами Узбекистана, в частности с Бухарским государственным институтом плодотворно и особо хочется отметить достижения в области фармакологии и фармации.

Сегодня весь мир переживает нелегкие испытания и борется против невидимого врага с большим терпением. В связи с этим, считаю, что научные и медицинские сообщества со всего мира должны сплотиться, чтобы найти эффективные методы борьбы с подобными явлениями и скорее преодолеть эти испытания. Я уверен, что данная онлайн-конференция, станет хорошей традицией для представителей медицинских вузов всего мира.

В Республике Узбекистан осуществляется широкомасштабная работа по укреплению здоровья и повышению благосостояния населения, совершенствованию системы здравоохранения, в том числе и подготовке высококвалифицированных медицинских кадров. Охрана здоровья населения является одним из приоритетных и стратегических направлений государственной политики, и постоянно находится в центре внимания многоуважаемого Президента и Правительства. Уверен, что данная онлайн-конференция станет хорошей площадкой для обсуждения актуальных проблем Фармакологии, фармации и клинической фармакологии, а также современных и эффективных методов дистанционного медицинского образования и науки, местом, где мы сможем на расстоянии обсудить перспективы развития системы здравоохранения и системы высшего медицинского образования с помощью инструментов дистанционного обучения как в нашей стране, так и во всём мире, говорить о том, что мы должны сделать, делиться своими идеями и рассказывать о достижениях. Онлайн-конференция предоставляет хорошую возможность для специалистов обменяться мнениями, обсудить сложные и нерешенные вопросы, согласовать дальнейшие направления исследований в рамках совместных программ. Я надеюсь, что работа конференции будет продуктивной и откроет новые возможности для сотрудничества в области Фармакологии, фармации и клинической фармакологии, а также медицинского образования. Поздравляю всех гостей и участников с открытием онлайн-конференции и желаю вам успехов в научно-исследовательской работе и плодотворной работы. Всего Вам самого наилучшего! Благодарю за внимание.

**Первый заместитель
министра здравоохранения РУз,
д.м.н., профессор:**

Амрилло Иноятов



Уважаемые гости, уважаемые участники конференции, друзья!



Я рад приветствовать Вас в Бухарском государственном медицинском институте имени Абу Али ибн Сино на 2 - Международной онлайн-конференции фармакологов, посвященной «Актуальным вопросам фармакологии: от разработки лекарств до их рационального применения».

Переход национальной экономики на инновационный путь развития связан с масштабными вложениями инвестиций в человеческий потенциал. Инновационный потенциал является стратегическим ресурсом,

определяющим место национальной экономики в мировой экономической системе. В большинстве стран инновационный потенциал рассматривается в качестве основополагающего источника экономического развития и является важнейшей составляющей национального богатства.

Процесс интеграции различных уровней и организационных форм образования, науки и производства – это тенденция, которая постепенно охватывает все страны мира, в том числе и Узбекистан. И неслучайно в последние годы много говорится о создании форм, которые могут объединить научный и образовательный потенциал.

Генерировать научные достижения в перспективных, приоритетных областях таких как фармакология и фармацевтика отвечает требованием времени. Другими словами, наиболее востребованным будет именно глубина и качество научных исследований и разработок как с точки зрения признания профессиональным научным сообществом, так и их практической значимости.

В такой сложный период пандемии COVID-19 научные достижения в области фармакологии и фармацевтики послужат эффективной борьбе с невидимым врагом для скорейшего преодоления этого испытания во всем мире.

Я уверен, что данная онлайн-конференция станет площадкой для обмена современных научных результатов для представителей медицинских учреждений и вузов всего мира.

На протяжении более 30 лет наш институт является кузницей кадров для нашей Республики. Выпускники нашего института успешно продолжают свою деятельность в медицинских учреждениях. А вместе с тем у нас в последние годы совместно с Курским государственным медицинским университетом, Казанским федеральным университетом и другими медицинскими университетами России, университетом GD Goenka Индии и многими другими выдающимися вузами мира открылись фармацевтические факультеты, Farm-D, биотехнологии и другие медицинские направления; началось строительство фармацевтического завода при нашем институте, где совместно с мировыми партнерами мы будем производить из лекарственных растений Узбекистана ряд лекарственных форм. Мы очень рады нашему сотрудничеству и надеемся, что оно будет процветать и развиваться.

Сегодняшнее мероприятие стало ежегодным и приобрело международный статус и является очередным шагом по созданию условий для реализации научных достижений.

Выражаю благодарность всем участникам конференции и гостям, которые нашли время принять в ней участие. Желаю плодотворных дискуссий и новых научных достижений!

**Ректор Бухарского государственного медицинского
института имени Абу Али ибн Сино,
д.м.н., профессор:**

Шухрат Тешаев

Ташкентский педиатрический медицинский институт совместно с Бухарским государственным медицинским институтом Республики Узбекистан, и Университетом GD Гоенка, Гуруграм, Харьяна, Индия, и другими партнёрами второй год организывает онлайн-конференцию по актуальным вопросам фармакологии: от разработки лекарственных средств к их рациональному использованию. Хотел бы отметить, что запланированная программа состоит из четырех важных направлений в фармакологии и клинической фармакологии, спортивной



фармакологии: проблемы и перспективы, организация поддерживающих препаратов первичной медико-санитарной помощи, разработка и анализ фармацевтических препаратов которые обеспечат инклюзивность.

В постпандемическую эпоху существенно меняется подход в информационной отрасли во всех сферах жизни. Следовательно, организация онлайн-семинара удовлетворяет потребности современного общества и закладывает следы. Особо хотел бы отметить заслуги Университета GD Goenka, руководителей фармацевтических учреждений и фармацевтических компаний.

Оргкомитет заслуживает профессионального уважения за уникальную инициативу проведения и организации онлайн-конференции с международным сотрудничеством.

Я уверен, что эта международная конференция предоставит отличную платформу для студентов, академиков, исследователей, промышленников и лидеров медицинской и фармацевтической профессии, чтобы поделиться своими взглядами о современных проблемах и завершить разработку дорожной карты для будущего с учётом возрастного аспекта педиатрии.

С наилучшими пожеланиями!

профессор С.С. Гулямов, проректор ТашПМИ

Greeting's massage!

It gives me immense pleasure to know that the Bukhara State Medical Institute, Republic of Uzbekistan in association with GD Goenka University, Gurugram, Haryana, India joint organizing the second online conference on Actual Issues of Pharmacology: From Drug Development to their rational use during May 6- 7, 2021.



I am further delighted to note that four important parallel tracks are planned in Pharmacology and Clinical Pharmacology; Sports pharmacology - problems and prospects; Organization of maintenance drugs of primary

health care; Development and analysis of pharmaceuticals will provide an inclusive

In the post pandemic era the coordinates are significantly changed in every walk of life. Hence organizing an online seminar seems to be fulfilling the needs of the contemporary society and setting the footprints.

The GD Goenka University, Gurugram, Haryana, India is always providing leadership to the Pharmaceutical Institutions and pharmacy profession through several professional activities. The organizing committee deserve compliments for this unique initiative of online seminar with international collaboration.

I am sure, this conference will provide an excellent platform for the students, academicians, researchers, Industrialists and leaders of the Pharma profession to share their views on contemporary issues and finalize a roadmap for the future endeavors.

My Good wishes the grand success of the seminar.

With Best Wishes!

MR. ROHIT GUJRAL

Managing Director

GD Goenka Group

SCIENTIFIC-THEORETICAL MEDICINE

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THE LITHOLYTIC THERAPY IN PATIENTS WITH AN UNDRAINED KIDNEY

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✓ *Resume*

The results of analysis of litholytic therapy in 55 patients with urate lithiasis with an undrained kidney was considered. When studying the reasons for the ineffectiveness of litholytic therapy in 20 patients, it was revealed that 13 patients did not fully carry out litholytic therapy and did not adhere to a purine-restricted diet. In 3 patients with ineffective drug therapy, the chemical composition of the stone was represented by ammonium urate

Keywords: *litholytic therapy, urolithiasis, urate urolithiasis, stone density, hyperuricemia.*

ЛИТОЛИТИЧЕСКАЯ ТЕРАПИЯ У ПАЦИЕНТОВ С НЕДРЕНИРОВАННОЙ ПОЧКОЙ

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✓ *Резюме*

Рассматривался анализ результатов литолитической терапии у 55 пациентов с уратным литиазом с недренированной почкой. При исследовании причин неэффективности литолитической терапии у 20 больных было выявлено, что 13 пациентов не в полном объеме проводили литолитическую терапию и не придерживались диеты с ограничением пуринов. У 3 пациентов с неэффективной медикаментозной терапией химический состав камня был представлен уратом аммония.

Ключевые слова: *литолитическая терапия; мочекаменная болезнь; уратный уролитиаз; плотность камня; гиперурикемия.*

БУЙРАГИ ДРЕНАЖЛАНМАГАН БЕМОРЛАРДА ЛИТОЛИТИК ТЕРАПИЯ

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✓ *Резюме*

Буйраги дренажланмаган 55та беморда литолитик давлони тахлиллари кўриб чиқилди. Булардан 20 нафар беморларда литолитик давлони самарасизлиги сабаблари ўрганилганда маълум бўлдики: улардан 13 нафари давлони тўлиқ олмаганлиги ва амал қилмаганлиги аниқланди. Самарасиз дорилар билан даволашда 3 нафар беморларда тошининг кимёвий таркиби аммоний урат бўлган.

Калит сўзлар: *литолитик терапия, сийдик тош касаллиги, уратли уролитиаз, тош зичилиги, гиперурикемия.*

Relevance

Urolithiasis is a general disease of the body, in which the metabolism of minerals is disturbed, which leads to the appearance of sand, the deposition of salts and the formation of stones in the kidneys and urinary tract. This pathology occurs worldwide in at least 3% of the population (Javad-Zade S.M., 2007; Zuzuk F.V., 2017; Chiglintsev, D.Yu. et al., 2018). Most often it affects people in the most active period of their life - 20-60 years. The probability of urolithiasis of urolithiasis by the age of 70 is 12.5%.

A feature of the treatment of urate urolithiasis is litholytic therapy, that is, dissolving therapy. Litholytic therapy should be comprehensive, aimed at reducing the content of uric acid in the body. For this purpose, drugs are used that have a uricostatic effect (Zolotarev I.I., 2007, 2015). Patients are assigned a diet that restricts protein-rich foods. After the normalization of purine metabolism, while maintaining the passage of urine through the upper urinary tract, it is possible to prescribe citrate drugs that have a litholytic

effect. Treatment is carried out under ultrasound control, with which it is possible to assess the effectiveness of the ongoing litholytic therapy (Alyayev Yu.G., Amosov A.V., 2014; Tikinsky O.L., Aleksandrov V.P., 2017). Recently efficiency litholytic therapy examined by spiral computer tomography, in which measured not only the size of stone, but their density in units of Hounsfield (Vasil'yev P.V., 2017; Deveci Setal, 2018).

It is important to note that only uric acid stones are quite successfully soluble during litholytic therapy. Stones containing sodium urate and potassium urate are poorly soluble. Ammonium urate is practically insoluble (Dzeranov N.K., Beshliev D.A., 2018). It should be noted that patients with urate nephrolithiasis with impaired purine metabolism need regular dispensary observation and periodically correction of maintenance therapy, since otherwise the disease will relapse quickly (Ras C.Y., 2016; Riese R.J., Sakhaee K., 2017; Tiselius H.G., 2018).

Purpose of the study: to study the results of litholytic therapy with urate lithiasis with an undrained kidney.

Result and discussion

The analysis of the results of litholytic therapy in 55 patients with urate lithiasis with an undrained kidney was considered.

In these patients, the nature of the diet was ascertained, urine sediment, urine pH, and the state of metabolic status were examined.

Complex therapy for patients was carried out according to the following method: for 3 days, three times a day, patients determined the average indicators of urine acidity, respectively, in the morning, afternoon and evening. After that, the patients followed the above diet for a week. Further, within a week, patients were recommended only to measure the average indicators of urine acidity (without following a diet). In case of stabilization of urine acidity indices in the range of 6.2-6.8, these patients were recommended to follow the diet further, if it was impossible to correct urine acidity within the above limits, in addition to diet therapy, citrate mixtures were prescribed therapy.

Results of the study showed that when entering the urine sediment in 43 (78,2%) patients were identified salt of uric acid in 12 (21,8%) were found in urine sediment salts.

The distribution of patients according to the acidity of urine upon admission is shown in Table 1, from which it can be seen that in the overwhelming number of patients - 49 (89,1%) upon admission, the urine reaction was acidic.

Table 1

Distribution of patients by urine acidity on admission

Acidity of urine	Number of patients	
	absolute	%
5.0-5.5	39	70.9
5.6-6.0	10	18.2
more than 6.0	6	10.9
Total	55	100

When examining the state of the metabolic status, namely, the indicators of purine and calcium metabolism before and one month after the complex litholytic therapy, it was found that only 17 (30,9%) patients had no changes in the indicators of purine and calcium metabolism before the start of treatment.

and among the types of metabolic disorders, hyperuricuria (23,6%) and hyperuricemia (21,8%) prevailed. A month after the litholytic therapy in 44 (80,0%) patients, it was possible to achieve correction of metabolic disorders (Table 2).

Table 2

Indicators of metabolic status in patients with an undrained kidney

Types of metabolic disorders	Before treatment	One month after treatment
Hyperuricuria	13	4
Hyperuricemia	12	3
Hyperuricuria + hyperuricemia	8	2
Combination of disorders of purine and calcium metabolism	5	2
No changes identified	17	44

When studying the nature of nutrition, it was found that 42 (76,4%) patients noted a regular diet, and in 13 (23,6%) patients, food was irregular (eating and on the go in fast food restaurants).

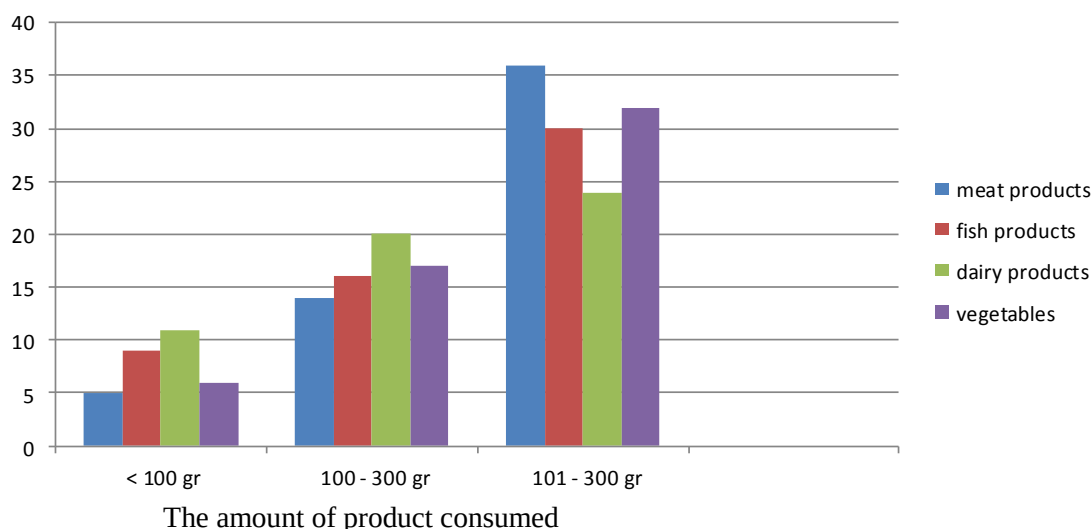
The daily fluid intake in 43 (78,2%) patients was up to 1,5 liters, in 12 (21,8%) patients - more than 1,5 liters. Also, 30 (54,5%) patients noted regular alcohol consumption.

The distribution of patients according to the prevalence of a particular product in the weekly diet is shown in Figure 1, from which it can be

seen that only 14 (25,4%) patients had a balanced diet, with a uniform (up to 300 grams per day) consumption of meat, fish, and dairy products. and vegetables. In 36 (65,4%) patients, the diet was dominated by meat products in the amount of more than 300 grams. The predominance of meat products in the diet (more than 300 grams), as well as an irregular diet, salty nature of food intake, reduced daily fluid intake during the day (up to 1,5 liters), as well as regular alcohol consumption, are risk factors and require correction nutrition.

Picture 1

Distribution of patients by diet



Therefore, all patients, especially those with an increased consumption of meat products and alcohol, in their treatment, in the first place, were recommended the following correction of the diet: meat and fish products were limited (liver, herring, kidneys, sausages, smoked meats, sprats, sardines, turkey, chicken, smoked and fatty fish), pickles, legumes, eggs, grains, fats (mutton, beef), mushrooms, sorrel, spinach, cauliflower, chocolate, figs, raspberries, peppers, mustard, cocoa, strong coffee and tea.

Patients were recommended:

1. Lean meat, fish no more than 3 times a week, boiled. After boiling, meat and fish can be used for cooking in various forms (stew, bake);
2. Dairy products: milk, fermented milk drinks, cottage cheese, sour cream, cheese;
3. Eggs: no more than one per day in any processing;
4. Fats: butter, cow, ghee and vegetable oils;
5. Cereals in the form of any dishes, in moderation;
6. Bread and flour products: wheat and rye, from second grade flour;
7. Vegetables: in sufficient quantity and in any processing;
8. Vegetarian soups: borsch, vegetable, potato, beetroot, dairy, fruit;
9. Cold for pieces: salads, fruits, vinaigrette;

10. Fruits, berries in any processing, dried fruits, milk jelly and creams, marmalade, jam, honey;

11. Sauces: vegetable, sour cream, milk;

12. Spices: citric acid, vanillin, cinnamon;

13. Drinks: tea, weak coffee with milk, fruit drinks, juices, decoctions of rose hips and dried fruits.

In the considered group of patients, the following average indicators of urine acidity were obtained in 49 (89,1%), 51 (92,7%), 47 (85,4%) patients, an acidic urine reaction was detected - up to 6,0 in the morning, daytime and evening time, respectively. Only in 4 (7,3%) patients, the average indicators of urine acidity were 6,2 or more.

After carrying out diet therapy for a week, the following data were obtained; the use of diet therapy made it possible to achieve stabilization of urine acidity in the range of 6,2 or more in 12 (21,8%) patients. Therefore, in these 12 patients, diet therapy was continued, and the remaining 43 (78,2%) patients were additionally prescribed therapy with citrate mixtures.

In a detailed analysis of the ongoing complex therapy, it was found that out of 43 patients, 30 (69,7%) patients underwent adequate litholytic therapy with adherence to a diet, 10 (23,2%) patients litholytic therapy was carried out without correction of the diet, 3 more (6, 9%) of

the patient also did not follow the purine- restricted diet , while the litholytic therapy was carried out based not on a specific, but on the average urine acidity during the day.

At follow-up examination one month after complex litholytic therapy, complete dissolution of kidney stones was achieved in 30 (54,5%) patients. In another 5 (9,1%) patients, partial dissolution of urate stones was achieved, in connection with which they continued conservative

therapy. During the follow-up examination a month later, these 5 patients also achieved complete dissolution of the stones.

The distribution of patients by the effectiveness of litholytic therapy depending on the size and chemical composition of stones is shown in Table 3.

Table 3
The effectiveness of litholytic therapy depending on the size and chemical composition of stones

Stone size, cm	up to 1.5 cm (n = 32)	more than 1.5 cm (n = 23)
Chemical composition of stones		
Anhydrous uric acid (n = 32)	13 (81,2%)	10 (62,5%)
Uric acid dihydrate (n = 15)	6 (75,0%)	4 (57,1%)
Ammonium urate (n = 8)	2 (25,0%)	0
Total	21 (65,6%)	14 (60,9%)

As can be seen from Table 3, the most effective litholytic therapy turned out to be the most effective for kidney stones up to 1,5 cm and consisting of anhydrous uric acid - it was 81,2%, with stones up to 1,5 cm and consisting of uric acid dihydrate, the efficiency was 75%. With stones up to 1.5 cm and consisting of ammonium urate, dissolution was achieved in 2 patients. For stones larger than 1,5 cm and consisting of anhydrous uric acid and uric acid dihydrate, the efficacy was 62,5% and 57,1%, respectively.

When analyzing the administered litholytic therapy in 35 patients, in whom it proved to be effective, it was found that all of them, along with adherence to the diet, carried out adequate dissolving therapy - in severity depending on the indicators of urine acidity.

Conclusion

1. When studying the reasons for the ineffectiveness of litholytic therapy in 20 patients, it was revealed that 13 patients did not fully carry out litholytic therapy and did not adhere to a diet with restriction of purines;

2. In 3 patients with ineffective drug therapy, the chemical composition of the stone was represented by ammonium urate;

3. In 3 patients, the cause of ineffectiveness was a combination of items 1 and 2.

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Entered 09.04.2021

THE COMPARATIVE ANALYSIS OF THE SURGICAL TREATMENT RESULTS OF OLD SOFT TISSUE INJURIES OF THE FRONT SURFACE OF THE LOWER THIRD OF FOREARM

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✓ Resume

Fractures of the forearm in childhood and adolescence are a fairly common type of injury to the upper limb. This pathology is always accompanied by damage to soft tissue formations including the interosseous membrane, muscles and adjacent interosseous vessels, which aggravates the severity of the injury and largely determines the outcome of treatment. Based on the foregoing, the surgical method of treating chronic injuries of soft tissues of the anterior surface of the lower third of the forearm is one of the urgent problems that has not yet been resolved and requires further discussion. Neurolysis, tenolysis, myolysis, capsulotomy, muscle-tendon transposition, arthrodesis, with this pathology are poorly studied, in addition, the so-called long-term combined damage like soft tissues + tendons + ligaments + nerve + vascular damage requiring a differentiated approach, still little studied in the literature. This study analyses the results of the treatment of chronic soft tissue lesions of the anterior surface of the lower third of the forearm by applying individual surgical tactics.

Keywords: Obsolete, soft tissue, forearm, neurolysis, injury

СРАВНИТЕЛЬНЫЙ АНАЛИЗ РЕЗУЛЬТАТОВ ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ СТАРЫХ ПОВРЕЖДЕНИЙ МЯГКИХ ТКАНЕЙ ПЕРЕДНЕЙ ПОВЕРХНОСТИ НИЖНЕЙ ТРЕТЬИ ПЕРЕДНИЕ

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✓ Резюме

Переломы предплечья в детском и подростковом возрасте - довольно частый вид травм верхней конечности. Данная патология всегда сопровождается повреждением образований мягких тканей, в том числе межкостной перепонки, мышц и прилегающих межкостных сосудов, что усугубляет тяжесть травмы и во многом определяет исход лечения. Исходя из вышеизложенного, хирургический способ лечения хронических повреждений мягких тканей передней поверхности нижней трети предплечья является одной из актуальных проблем, которая до сих пор не решена и требует дальнейшего обсуждения. Невролиз, тенолиз, миолиз, капсулотомия, мышечно-сухожильная транспозиция, артродез при данной патологии мало изучены, кроме того, так называемое длительное комбинированное повреждение типа мягких тканей + сухожилий + связок + нерв + сосудистое повреждение, требующее дифференцированного подхода, еще мало изучен в литературе. В данном исследовании анализируются результаты лечения хронических поражений мягких тканей передней поверхности нижней трети предплечья с применением индивидуальной хирургической тактики.

Ключевые слова: устаревшее, мягкие ткани, предплечье, невролиз, травма.

**BLAK SOHASINING PASTKI QISMI ESKI ;AROHTLARINING JARROHLIK
DAVOSINING QIYOSIY TAHLILI**

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✓ **Rezyume**

Bolalik va o'spirinlik davridagi bilakning sinishi yuqori oyoq-qo'lning juda keng tarqalgan jarohati hisoblanadi. Ushbu patologiya har doim yumshoq to'qimalarning shakllanishiga, shu jumladan suyaklararo membrana, mushaklar va qo'shni suyaklararo tomirlarga shikast etkazish bilan birga keladi, bu shikastlanishning og'irligini kuchaytiradi va asosan davolanish natijasini belgilaydi. Yuqorida aytib o'tilganlarga asoslanib, bilakning pastki uchdan bir qismining oldingi yuzasi yumshoq to'qimalarining surunkali shikastlanishlarini davolashning jarrohlik usuli hali hal qilinmagan dolzarb muammolardan biridir va qo'shimcha muhokama qilishni talab qiladi. Ushbu patologiya bilan neyroliz, tenoliz, mioliz, kapsulomiya, mushak-tendon transpozitsiyasi, artrodez yomon o'rganilgan, qo'shimcha ravishda differentsial yondashuvni talab qiladigan yumshoq to'qimalar + tendonlar + ligamentlar + asab + qon tomirlari kabi uzoq muddatli qo'shma zararlanishlar deb ataladi, hali adabiyotda ozgina o'rganilgan. Ushbu ishda individual jarrohlik taktikasini qo'llash orqali bilakning pastki uchdan bir qismining oldingi yuzasining surunkali yumshoq to'qimalarining shikastlanishlarini davolash natijalari tahlil qilinadi.

Kalit so'zlar: *Eskirgan, yumshoq to'qima, bilak, neyroliz, shikastlanish*

Introduction

Damage to the soft tissues of the front surface of the forearm is one of the most common household injuries, reaching 23.7% -27.1% of all types of injuries [1,3,7,16,17, 21]. Complications arising in this case, observed in 53.4% -61.9%, are a direct result of mistakes made during emergency care [2, 9, 10, 14, 15, 18]. Along with the modern development of medicine, the treatment of soft tissue wounds of the anterior upper limb is one of the unexplored problems of traumatology and orthopedics. In particular, neuro-tenoraphy, neurolysis, tenolysis, myolysis, capsulotomy, muscle-tendon transposition, arthrodesis, with this pathology are poorly studied, in addition, the so-called long-term combined damage like soft tissues + tendons + ligaments + nerve + vascular damage requiring a differentiated approach, still little studied in the literature. Inadequate surgical procedures lead to an increase in disability and account for 86.3% of 83.7% [4, 5, 19, 20, 22, 23]. Based on the foregoing, the surgical method of treating chronic injuries of soft tissues of the anterior surface of the lower third of the forearm

is one of the urgent problems that has not yet been resolved and requires further discussion.

This study will analyses the results of the treatment of chronic soft tissue lesions of the anterior surface of the lower third of the forearm by applying individual surgical tactics.

Materials and methods

Our study involved 46 patients with chronic soft tissue injuries of the anterior surface of the lower third of the forearm that were treated in the Department of Traumatology, Clinical Hospital № 1, Tashkent between 2012 and 2014. Patients were divided into 2 groups: 25 patients made up the control group who were applied traditional tactics and 21 patients of the main group who used personalized advanced surgical tactics. Of the 21 patients in the main group, 16 patients were men, 5 were women; of these, 8 were 18–25 years old, 2 patients were 26–35 years old, 11 patients were 36–45 years old. In the control group, 22 patients were men, 3 patients were women, 10 patients aged 18–25 years, 12 patients aged 26–35 years, and 3 patients aged 36–45 years (Table 1). All

patients underwent clinical, laboratory, x-ray, (magnetic resonance imaging) scans. ENMG (electroneuromiography) and MRI

Table 1: Distribution of patients by sex and age in the control and main groups (n = 46)

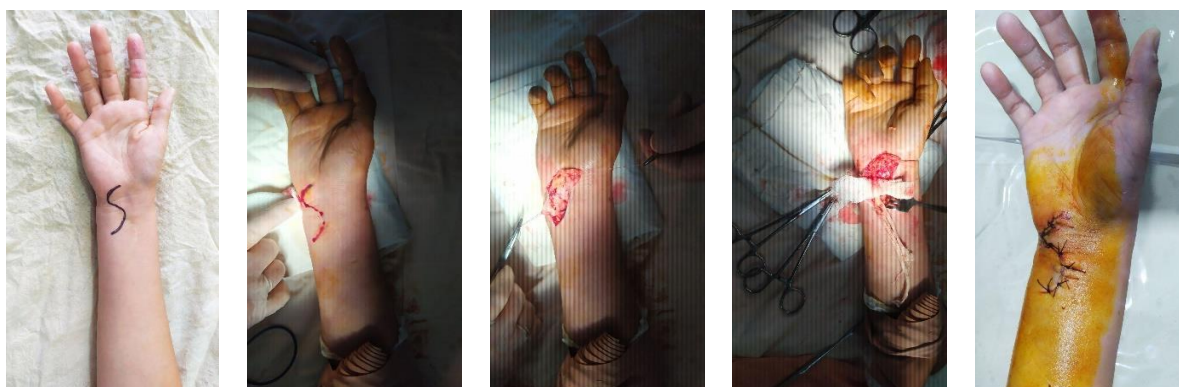
Group	Age	Gender		Total %
		Men %	Women %	
Main	18-25	7 (33,3%)	1 (4,8%)	38,1%
	26-35	8 (38,1%)	3 (14,3%)	52,4%
	36-45	1 (4,8%)	1 (4,8%)	9,5%
Control	18-25	9 (36%)	1 (4%)	40%
	26-35	11 (44%)	1 (4%)	48%
	36-45	2 (8%)	1 (4%)	12%
Total		38 (82,6%)	8 (17,4%)	100%

The treatment results were evaluated on the Disabilities of the Arm, Shoulder and Hand (DASH) scale, which have 30 criteria up to 5 points.

Applied method of technique

The technique is carried out as follows: The patient, after processing the surgical section of the skin with an "S"-shaped cut along the anterior surface of the lower third of the forearm, separates the skin from healthy tissues, and then cuts through the skin to form a new bone structure that is more like a bone structure than a normal bone. Two oncoming fascial-fatty flaps are then formed from local tissues, which are sutured and removed in different directions, and

then removed from the surrounding tissues. This is done to provide the full volume of appropriate surgical treatment available to the patient and to the patient as a whole. The advantage of this method is that, with these incisions between the skin and subcutaneous tissue, the initial skin incision is smaller and the type of damage is clearly and completely determined. Another advantage of the "S"-shaped incision is that, when combined with older injuries, that is, simultaneously with damage to tendons, muscles, blood vessels and nerves of various degrees, access allows you to perform all the planned manipulations without any additional expansion of the wound.



Old damage to the soft tissues of the anterior surface of the lower third of the forearm. "S" - shaped cut.

Execution of the "S" -shaped incision along the anterior surface of the lower third of the forearm reduces the skin incision, the type of damage is clearly defined and in full, in addition, the advantage of the "S" -shaped incision is that,

with chronic combined injuries of tendons, muscles, blood vessels and nerves of various degrees, all planned surgical procedures are performed without additional expansion of the wound.

The formation of two opposite fascial-fatty flaps from local tissues, which are sutured

and retracted in different directions, allows you to determine the type and extent of damage.

Thus, the use of the proposed method in trauma practice in the treatment of chronic combined injuries of the soft tissues of the anterior surface of the lower third of the forearm allows the most complete and less traumatic restoration of the functionality of the damaged structures.

At the end of the operation, the wounds are sutured in layers, pre-washed with aseptic solution and then placed into the patient's own tissue. The wound is then removed and treated with a liquid solution. The wound is then removed and treated with a liquid solution.

Results

The treatment results for all patients were analyzed based on the three most commonly used

criteria, namely, good, satisfactory and unsatisfactory, and based on clinical, instrumental and functional criteria. Nine (36.0%) patients in the control group had a combined fracture or damage to the ligament on the front surface of the forearm, of which 6 (66.7%) had good results and 2 (22.2%) were satisfactory. In both patients, clinical signs showed moderate tissue hypotrophy, while 1 (11.1%) patient received an unsatisfactory result, which was not successful. Mixed obsolete trauma (without damage to the nerve vessel) of skin lesion + skin defect in 7 (28.0%) patients. Five (71.4%) of these patients received good results after percutaneous resection, without satisfactory results, and 2 (28.6%) patients had unsatisfactory results due to pus (Table 2).

Table 2: Results of treatment in patients of the main and control groups

Assessment Criteria	Main group			Control group		
	With unmixed old damage %	With mixed nerve damage %		With unmixed old damage %	With mixed nerve damage %	
		No damage to nerve tissue	With damage to nerve tissue		No nerve damage	With nerve damage
Good	3 (14,3%)	5 (23,8%)	9 (42,9%)	6 (24%)	5 (20%)	5 (20%)
Satisfactory		2 (9,5%)	1 (4,8%)	2 (8%)		1 (4%)
Unsatisfactory			1 (4,8%)	1 (4%)	2 (8%)	3 (12%)
Total	3 (14,3%)	7 (33,3%)	11 (52,4%)	9 (36%)	7 (28%)	9 (36%)
	21			25		

In the remaining 9 (36.0%) patients, mixed (with damage to the nerve vessel), 5 (55.6%) patients had good results in 1 (11.1%) with lung tissue malnutrition, the forearm - contractions were observed in the palms and fingers, in 3 (33.3%) patients had unsatisfactory results, 3 patients had nerve paresis, soft tissue atrophy and joint contractions.

All patients treated in the main group were evaluated according to three criteria based on clinical, instrumental control and functional criteria. The new method developed by the author not only allows the identification and elimination of pathological processes in the tissues, but also improves the results after treatment. Here are

some of the patients who were treated by this method: all patients of the experimental group had combined obsolete injuries in 3 (14.3%) of 21 patients who were treated by the authors' method, and all clinical, instrumental and functional symptoms were normalized and evaluated positively. Seven (33.3%) patients had nontraumatic damage to the nervous vascular system, five of 7 patients (71.4%) had three criteria, three were rated good, and 2 (28.6%) had a quality score and evaluation criteria were satisfactory, and unsatisfactory results were not identified. In 11 (52.4%) patients, the compound was treated with obsolete mixed nerve injuries, and the results after treatment were as follows: in

9 (81.8%) patients, clinical signs were completely restored, instrumental changes were normalized, and functional symptoms, namely

movements of the wrist and thumb were fully restored. Postoperative results improved and patients recovered completely.



ENMG examination of the patient

In 1 patient, the sensitivity and motor function of the nervous system were partially restored, that is, ENMG was below normal; in another patient, due to a violation of the orthopedic regimen, atrophy of soft tissues, paresis of the carpal nerve and palm of the wrist, as well as contraction of the fingers, were observed. As the analysis showed in the control group, 11 (44%) patients received good results, 8 (32%) satisfactory and 6 (24%) patients received unsatisfactory treatment results. In the main group, 17 (81%) patients had a good result, 3 (14.3%) were satisfactory, and 1 (4.7%) patient was unsatisfactory. The study of DASH indicators at the control examination was conducted in 21 patients. The distribution of indicators in the 1st and 2nd subgroups of patients showed that the best subjective assessment of hand function in the study sample was presented in the 1st subgroup with isolated injuries of nerves or tendons. A higher DASH score was observed in patients with mixed chronic injuries (nerves vessels, tendons). Thus, the use of the proposed method in surgical practice for chronic combined soft tissue injuries of the anterior surface of the lower third of the forearm allows the functionalization of damaged tissues to be fully and less traumatic.

Discussion

Chronic damage to the soft tissues of the anterior surface of the lower third of the forearm is not only a localized violation of the palms of the wrists, but also a clinical manifestation of post-traumatic disease. The location of the pathological process in the neurotrophic nature is objective, its identification allows us to predict and prevent the development of the disease. Evaluation of clinical, medical history, laboratory

and electrophysiological indications of patients with mixed soft tissue injuries on the front surface of the forearm shows that timely detection of neurotrophic complications in patients at risk and assessment of injury results and prediction of results [1, 3, 6, 7]. The lower forearm is an indication for surgical treatment for incomprehensible complex injuries of the anterior surface of soft tissues, compression ischemic neuropathy and scars, anatomical damage to nerves and tendons [6, 8, 11, 18]. After severe injuries in the front surface of the lower third of the forearm, patients have a limited choice of profession and increased disability. The level of disability after injury in this area is in first place among musculoskeletal injuries and is 13-30% [2, 7, 12, 13]. Dynamic studies, good results at different stages of treatment, the gradual conduct of primary reconstructive surgical interventions lead to a quick and complete restoration of the neuromuscular apparatus with damaged joints of obsolete nerves and tendons. Thus, the aforementioned method will help to fully diagnose wounds on the anterior surface of the lower forearm, to identify the underlying wound and eliminate areas of the pathological source, thereby improving the outcome of treatment and reducing the number of complications and disorders.

Conclusion

The proposed method will improve the effectiveness of the results of treatment of chronic soft tissue injuries of the anterior surface of the lower third of the forearm to 83.8%, helps to restore the anatomical structures of soft tissues and the ability to work of patients with a decrease in unsatisfactory results by 24.7%.

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DIAGNOSTICS OF MYOCARDIAL STANNING OF THE LEFT ATRIAL IN LATENT DIASTOLIC DYSFUNCTION OF THE LEFT VENTRICULAR

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✓ Resume

Harvard Medical School called the phenomenon of myocardial stunning, which means "stunning". In addition, the question of whether myocardial stunning has clinical significance, since the decrease in myocardial contractility during stunning is reversible, remained controversial. An increase in blood pressure leads to the development of left ventricular (LV) remodeling, which includes the processes of hypertrophy and dilatation, changes in geometry and impaired systolic and diastolic functions. Structural changes in the LV are accompanied by an overload of the left atrium (LA) and its dilatation, which, in turn, leads to stunning of the LA and is a factor predisposing to the development of rhythm disturbances such as ventricular extrasystoles (VE), atrial fibrillation (AF). On the other hand, this rhythm disturbance itself causes LA dilatation. However, recent research data indicate that a more accurate marker of LA structural remodeling is the LA volume index.

Key words: left ventricular remodeling, left atrial stunning, cardiac arrhythmias, VE, AF, arterial hypertension.

ДИАГНОСТИКА СОСТОЯНИЯ МИОКАРДА ЛЕВОГО ПРЕДСЕРДИЯ ПРИ ЛАТЕНТНОЙ ДИАСТОЛИЧЕСКОЙ ДИСФУНКЦИИ ЛЕВОГО ЖЕЛУДОЧКА

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✓ Резюме

Гарвардская медицинская школа назвала феномен «оглушение» миокарда, что означает «оглушение». Кроме того, оставался спорным вопрос о том, имеет ли оглушение миокарда клиническое значение, поскольку снижение сократимости миокарда во время оглушения является обратимым. Повышение артериального давления приводит к развитию ремоделирования левого желудочка (ЛЖ), которое включает процессы гипертрофии и дилатации, изменения геометрии и нарушения систолической и диастолической функций. Структурные изменения ЛЖ сопровождаются перегрузкой левого предсердия (ЛП) и его дилатацией, что, в свою очередь, приводит к оглушению ЛП и является фактором, предрасполагающим к развитию нарушений ритма, таких как желудочковая экстрасистолия (ВЭ), фибрилляция предсердий (ФП). С другой стороны, это нарушение ритма само вызывает дилатацию ЛП. Однако данные последних исследований показывают, что более точным маркером структурного ремоделирования ЛП является индекс объема ЛП.

Ключевые слова: ремоделирование левого желудочка, оглушение левого предсердия, сердечные аритмии, ВЭ, ФП, артериальная гипертензия.

YURAK CHAP QORINCHASI DIOSTALIK LATENT DISFUNCSIYA HOLATIDA CHAP YURAK BO'MACHASI MIYOKARDI FUNKSIONAL HOLATINI TASXISHLASH

Baratova M.S., Khamrashaev B.B.

Jamoat salomatligi va sog'liqni saqlashni boshqarish Abu Ali ibn Sino nomidagi Buxoro davlat Tibbiyot Instituti Respublika shoshilinch tibbiy yordam ilmiy markazining Buxoro filiali

✓ **Rezyume**

Garvard tibbiyot maktabi bu hodisani miokardni hayratlanarli deb atadi, bu ajoyib degan ma'noni anglatadi. Bundan tashqari, miyokardni hayratga solishning klinik ahamiyati bor-yo'qligi masalasi munozarali bo'lib qoldi, chunki hayrat paytida miyokardning kontraktilyasining pasayishi orqaga qaytariladi.

Qon bosimining ko'tarilishi gipertrofiya va dilatatsiya jarayonlarini, geometriyadagi o'zgarishlarni, sistolik va diastolik funktsiyalarni buzilishini o'z ichiga olgan chap qorincha (LV) qayta qurish rivojlanishiga olib keladi. LVdagi tarkibiy o'zgarishlar chap atriumning (LA) haddan tashqari yuklanishi va uning kengayishi bilan birga keladi, bu esa o'z navbatida ajoyib LA ga olib keladi va qorincha ekstrasistolasi (VE), atriyal kabi ritm buzilishlarini rivojlanishiga moyil bo'lgan omil hisoblanadi. fibrillatsiya (AF). Boshqa tomondan, ushbu ritm buzilishining o'zi LA dilatatsiyasini keltirib chiqaradi. Biroq, yaqinda o'tkazilgan tadqiqot ma'lumotlari shuni ko'rsatadiki, LA tarkibiy qayta qurishni aniqroq belgisi bu LA hajm indeksidir.

Kalit so'zlar: chap qorinchani qayta qurish, chap atriyalni hayratga solishi, yurak ritmining buzilishi, EE, AF, arterial gipertenziya.

Relevance

Changes in blood pressure, starting as a functional disorder, consistently lead to specific organ damage and, in the absence of timely and adequate therapy, to severe cardiovascular complications. One of the significant medical and social problems is arterial hypertension (AH). By 2025, it is predicted that the number of hypertensive patients will increase by more than 1.5 times and will amount to 1.5 billion patients in the world [1, 12, 17, 18, 23, 27]. Such as disability and premature mortality from the development of complications such as atrial fibrillation, thrombosis of the heart cavities, cerebrovascular accident, myocardial infarction, circulatory failure, etc. Heart changes that occur with arterial hypertension are the cause of the development of heart rhythm disturbances ventricular extrasystoles (VE), tachycardia, atrial fibrillation (AF). Atrial dilatation plays an important role in the development of AF. In 1975, representatives of the Harvard Medical School, led by Heyndrickx G.R., presented the results of an experimental study that examined the effect of ischemia and subsequent reperfusion on myocardial contractility. Later, other representatives of the Harvard Medical School called this phenomenon myocardial stunning, which means "stunning" [38,39]. In addition, for a long time the question of whether myocardial stunning has a clinical significance, since the decrease in myocardial contractility during stunning is reversible, remained controversial. Structural changes in the atria such as "stunnedness" or stunning of the myocardium are of particular importance for the development of tachycardia, PVC, AF [5]. A natural consequence of arterial hypertension (AH) is the formation of left ventricular hypertrophy (LVH), which leads to an increase in left ventricular (LV) rigidity and worsening of its diastolic relaxation, which leads to LV diastolic dysfunction [3,6,9]. The amount

of preload is of great importance in the diastolic function of the ventricles. The compliant ventricle is easily filled with blood, which contributes to adequate stretching and subsequent contraction of muscle fibers according to the Frank-Starling law. A "hard" ventricle is unable to receive the required volume of blood. In order to achieve stretching of the muscle fibers and provide the necessary preload, an increased filling pressure is required. As a result, the end-diastolic pressure (EDP) in the ventricle increases, which contributes to the preservation of the normal EDP and cardiac output for the time being [1,37]. The consequence of a violation of the extensibility of the ventricular myocardium is also a compensatory increase in atrial contractility, which intensively ejects at the end of the diastole the last volume of blood filling the ventricle, increasing the preload and maintaining the normal stroke volume (SV) and cardiac output. With atrial fibrillation, in the absence of a single atrial contraction, there is a significant decrease in preload, stroke volume and cardiac output [4]. LV diastolic dysfunction promotes hemodynamic overload of the left atrium, its stretching, manifestation of arrhythmic activity in the form of supraventricular rhythm disturbances - extrasystole, atrial fibrillation [14]. Back in 1964 G.K. Moe et al. came to the conclusion that any increase in the size of the left atrium increases the likelihood of developing atrial fibrillation [30]. And in 1986 M.S. Kushakovskiy described dilatation of the left atrium as a prerequisite for the inevitability of atrial fibrillation [10,11]. It is known that atrial myocardial dystrophy with their subsequent "primary" and "secondary" (retrograde) expansion create a substrate for sinus rhythm disturbances (SR). However, earlier, in 1949, E. Phillip and S. Levin reported on the possibility of developing paroxysms of tachycardia, atrial

fibrillation (AF) in people who do not have any heart disease, except for the tachyarrhythmia itself. Diagnosis of disorders of diastolic function is based mainly on the use of instrumental methods [20,21,25,26,33,34]. To assess diastolic function in a clinical setting, two approaches are used: a) assessment of active and passive characteristics of relaxation; b) analysis of the structure of diastolic filling. It is known that in hypertension, remodeling of the left ventricle (LV) develops, including the processes of hypertrophy and dilatation, changes in geometry and impairment of systolic and diastolic functions [13,26]. Structural changes in the LV are accompanied by LA overload and its dilatation, which, in turn, is a factor predisposing to the development of rhythm disturbances. On the other hand, this rhythm disturbance itself causes LA dilatation [15,17,22,28]. However, recent research data indicate that a more accurate marker of LA structural remodeling is the LA volume index (LPI) [21, 31].

In 1989. W. Manning et al. demonstrated in their studies that in most patients with persistent AF, after restoration of sinus rhythm, a phenomenon of temporary mechanical LA dysfunction was observed, characterized by the authors as the phenomenon of "stunning" or "stunned" [24]. And in subsequent studies by other authors, the phenomenon of inhibition of the function of the LA and its ear was confirmed [16, 14,21]. In 1988 I. Van Dam et al. proposed to use a combined index - the ratio of the velocities of the peaks E and A of the transmitral blood flow [35]. If relaxation of the left ventricle is impaired, the decrease in pressure in it during diastole slows down, which in turn leads to a decrease in the rate of early filling (peak E). As a result, there is an increase in the filling volume and the rate of contraction of the left atrium (peak A). In the mosaic lesion of the myocardium, there are areas without signs of mechanical activity, but with preserved basic physiological functions. Departure from this ideal geometry dictates the need for early application of diagnostic methods for the "dormant", "stunned" left atrial myocardium. Thus, the diagnosis of stunning LP in arterial hypertension with normal and latent diastolic dysfunction in the analysis of literature data allows us to conclude that currently it is insufficiently studied.

Purpose of the study: To diagnose left atrial stunning in patients with arterial hypertension with normal and latent left ventricular diastolic dysfunction. The research results were processed using the statistical processing packages Statistica, version 6.0. The research used the methods of mathematical statistics: methods of

variation statistics, frequency, variance and correlation analyzes. The significance of differences in the groups was determined using the t-test (Student's test).

Material and methods

On the basis of the regional cardiological dispensary, a retrospective study was made of 73 outpatient records of patients with essential hypertension and rhythm disturbances aged 30 to 56 years (average age 40.2 ± 2.7 years). The observation period was 6 months. Patients complained of palpitations, recurrent discomfort behind the breastbone, feeling short of breath, and destabilization of blood pressure. A Holter ECG and an ultrasound examination (ECHO KG) were performed. In order to diagnose left ventricular (LV) remodeling, the myocardium mass, myocardial mass index, and relative wall thickness index were determined. To assess the geometric model of the LV, the classification was used (normal LV geometry, concentric left ventricular remodeling - LV, concentric LV hypertrophy - eccentric LV hypertrophy). The patients were divided into 2 groups: group 1 ($n = 32$) with hypertension without heart rhythm disturbances. The duration of hypertension was 4.894 ± 2.21 years, in group 2 ($n = 41$) with hypertension and cardiac arrhythmias - tachycardia, VE, impaired repolarization of the ventricles. The duration of hypertension in this group was 5.820 ± 3.21 years. In the presented group, during the study, we identified the following variants of heart rhythm disturbances: tachycardia - 10 (24%), frequent ventricular monotopic extrasystole - 18 (44%), polytopic - 6 (33%), atrial fibrillation - 13 (32%).

The diagnosis was established on the basis of anamnestic, clinical, laboratory data, as well as the results of a functional diagnostic study, echo cardiographic examination and examination of the fundus, if necessary, consultation of a neuropathologist. Symptomatic arterial hypertension was excluded based on the results of the study of general blood, urine, biochemical parameters, and ultrasound examination of the kidneys. Among the patients studied, there were also no patients with ischemic heart disease, with signs of heart and renal failure, anemia, lung disease, diseases, thyroid gland, diabetes mellitus.

Systolic and diastolic blood pressure was measured for all subjects, echocardiographic studies were performed on the dimensions of the left atrium along the long axis and in the 2-chamber position, the transmitral flow, the thickness of the interventricular septum and the posterior wall of the left ventricle.

The primary study and the decision to enroll in the study were carried out within the first 2-3 days after contacting the clinic. During this period of time, patients did not receive drugs that could affect hemodynamics.

The studies were carried out in a polyclinic on a SANOMED-500 ultrasound machine. During echocardiography along the long axis, the end diastolic (EDV) and end systolic (ESV) volumes of the left ventricle were determined, along the long axis and in the apical 2-chamber position, the systolic volumes of the left (VLP), the size of the LP. With the help of pulse-wave Doppler, the degree of mitral regurgitation was specified. To assess the systolic function of the left ventricle, the ejection fraction (LVEF) was calculated. Violation of left ventricular diastolic function was diagnosed if people under the age of 50 had less than 55 cm/s.

Statistical processing of the obtained results was carried out using the statistical package "Statisticav.6.0". The arithmetic mean (M) and the

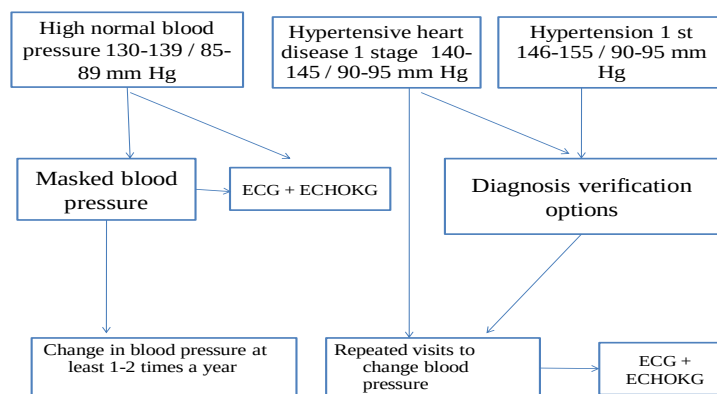
error of the mean (m) were calculated. The normality of the sample distribution was assessed by the Kolmogorov - Smirnov test.

The reliability of the differences between the values was determined using the Student's t-test with a normal distribution of the trait, with the distribution of a trait different from normal - using the nonparametric Mann - Whitney method. For the analysis of qualitative features, Fisher's exact test and χ^2 were used. Differences were considered significant at $p \leq 0.05$.

Results of the study

ECG changes were diagnosed in the first group 40.13% of cases, in the second group 47.71% of cases and in the third group 12.14% of cases, risk distribution: risk 1 - 53 people. (35.58%), risk 2 - 50 people. (33.50%), risk 3 - in 39 people. (26.17%), risk 4 - in 7 people. (4.75%). In total, changes in the analyzed ECG parameters were detected in 48.99% of cases..

Research algorithm:



The most often revealed ECG changes: incomplete blockade of the right bundle branch block - 4 people. (6%), violation of intraventricular conduction - 5 people. (7%), supraventricular

extrasystoles - 35 people. 47%, ventricular premature beats - 15 people. (21%), early repolarization of the ST segment - 5 people (7%), atrial fibrillation - 9 people (12%).

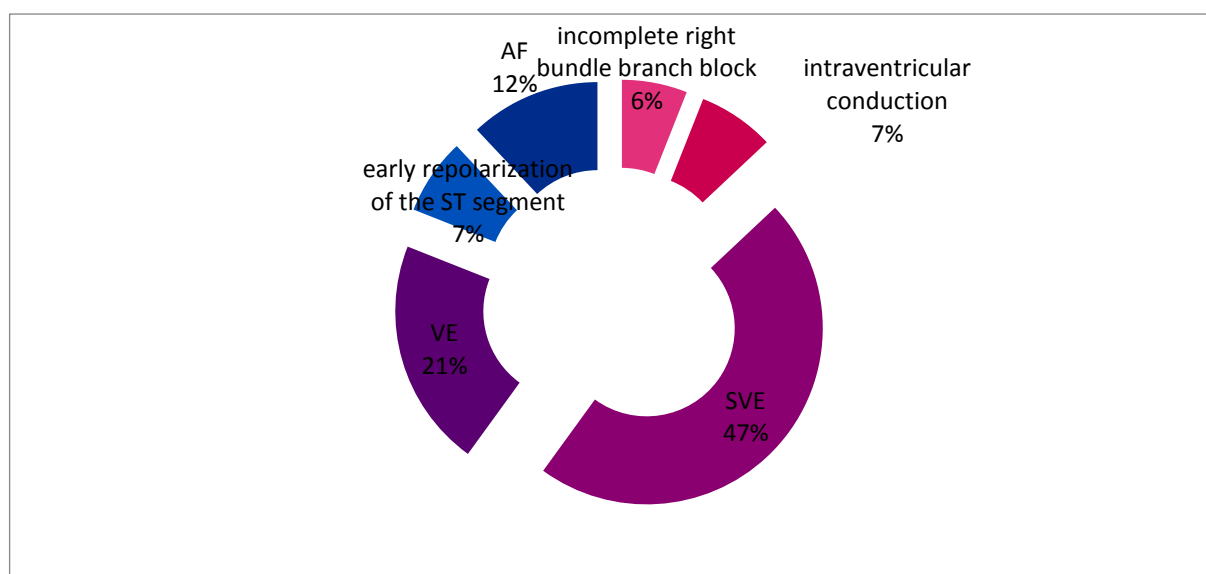


Figure 1. Changes in the indicators of conduction disturbances on the ECG in the subjects (in percentages).

In the study of echocardiography, myocardial hypertrophy was often observed along the interventricular septum of the median from 1.09-

1.12 cm - in 46 people (30.89%), basal 1.12-1.14 cm - in 28 people (18.79%), anterior-apical sections from 1.14-1.21 cm - in 58 people (38.92%), 1.21-1.3 cm along the interventricular septum and posterior wall - in 17 people. (11.41%).

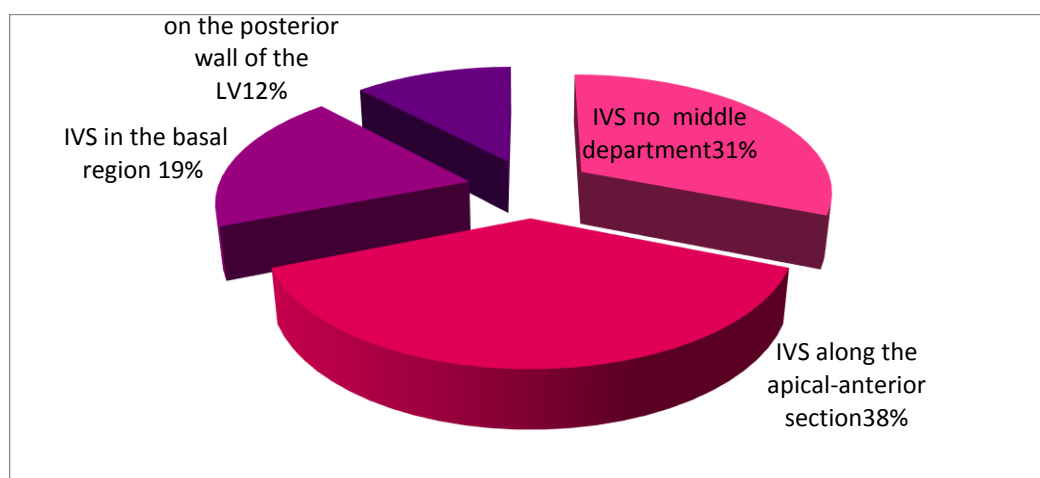
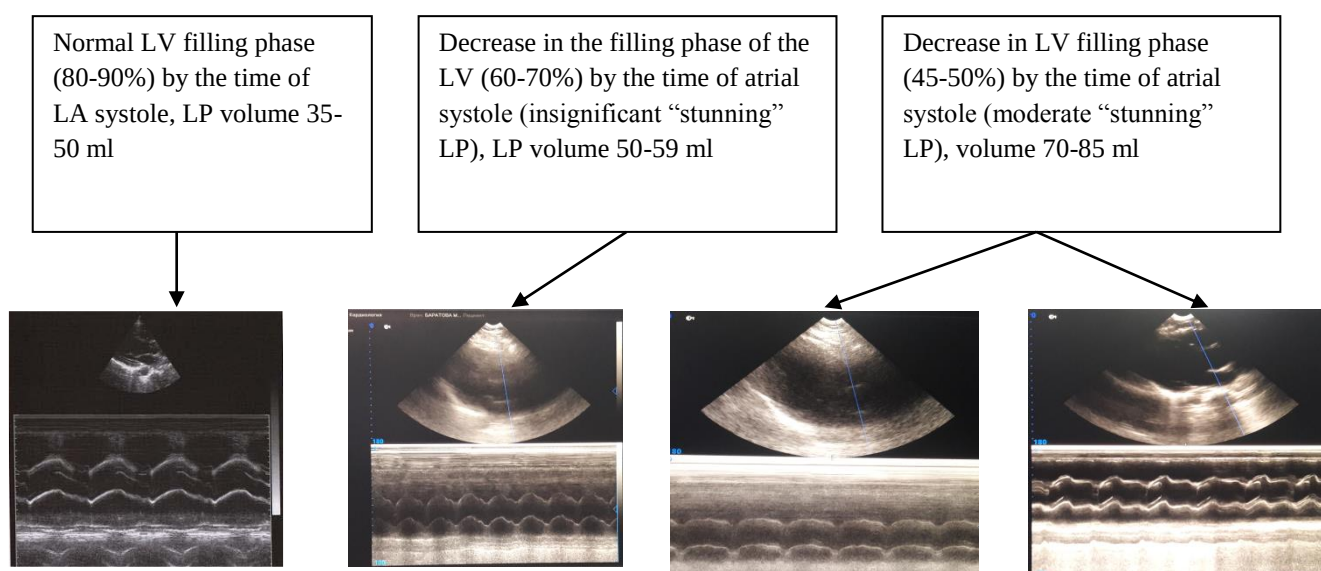


Figure 2. EchoCG indices of changes in the interdigital septum and the posterior wall of the left ventricle in the subjects.



The size and deformation of the LA closely depends on the state of the LV, the stiffness and extensibility of which during filling, as well as

contractility during systole, affect the atrial parameters (Table 1).

Hemodynamic parameters and changes in the size of the left atrium in the examined individuals

№	Study groups	1- group n=32	2- group n=41
1	IVS, mm	11,074±1,224	12,2400±1,033
2	BW LV, mm	10,348±1,330	12,029±1,785
3	LP volume (ml)	41,711±3,454	46,786±3,621
4	Long axis LP	4,161±3,340	4,712±3,230
5	LVEF, %	61,256±2,372	57,468±2,282*
6	LVMI, g / m2	98,297±4,088	138,125±4,550**
7	SBP	124,210±6,210	134,424±6,400*
8	DBP	83,860±4,420	94,125±4,240*

Note: * p <0.05, ** p <0.05 significance of differences between groups.

Early diagnosis of the study of temporary "stunnedness" - in other words, stunning left atrium of the left atrium of the 2nd and 4th chamber positions, and the size determined by the length of the heart axis.

Myocardial hypertrophy leads to an increase in the rigidity of the left ventricle (LV) and a deterioration in its diastolic relaxation, which leads to stunning (stunning) of the left atrial myocardium. Atrial contraction and their relationship to transmitral blood flow in LV hypertrophy leads to a partial absence of atrial systole (peak A) as well as to a decrease in the atrial systolic blood flow rate of less than 0.5 m / sec. A decrease in atrial blood flow velocity leads to left atrial instability and the occurrence of temporary LA stunning and its duration may be associated with the duration of the current episode of atrial fibrillation, with the size of the atria.

Conclusion

In patients, the electrocardiogram in 39.5% reveals changes associated with stunning of the left atrium, leading to impaired intraventricular conduction, early repolarization syndrome and cardiac arrhythmias (tachycardia, extrasystoles). Remodeling was observed, leading to hypertrophy of certain parts of the myocardium, and in 31.5% of cases, the concentric type of hypertrophy occurs, which is considered the most unfavorable in prognostic terms, which requires more careful monitoring of this category of patients. The examined patients showed early signs of left ventricular diastolic dysfunction, diastolic dysfunction is mainly represented by hemodynamic disorders and early stunning of the left atrium (67%). It is certain that with atrial contraction and their relation to the transmitral blood flow in LV hypertrophy leads to a partial absence of atrial systole (peak A) as well as to a decrease in the speed of atrial systolic blood flow less than 0.5 m/sec.

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TACTICS OF EMERGENCY TREATMENT OF ATRIAL FIBRILLATION: A MODERN VIEW OF THE PROBLEM

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✓ **Resume**

This article is a literary review, which presents a modern view on the strategy and tactics of relieving AF attacks, indications for pharmacological cardioversion (PCV) and electrical impulse therapy (EIT). Based on the material presented, international recommendations for the management of patients with AF were taken, as well as data from a number of modern studies and our own clinical experience in the treatment of arrhythmias. The article also deals with the issues of emergency treatment of AF and expresses the author's point of view on the results of a number of studies in this area of arrhythmology.

Key words: atrial fibrillation, emergency therapy, electrical cardioversion, electrical pulse therapy, pharmacological cardioversion, antiarrhythmic drugs.

**ТАКТИКА ЭКСТРЕННОГО ЛЕЧЕНИЯ ФИБРИЛЛЯЦИИ ПРЕДСЕРДИЙ:
СОВРЕМЕННЫЙ ВЗГЛЯД НА ПРОБЛЕМУ**

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✓ **Резюме**

Данная статья представляет собой литературный обзор, в котором представлен современный взгляд на стратегию и тактику купирования приступов ФП, показания к фармакологической кардиоверсии (ПКВ) и электроимпульсной терапии (ЭИТ). На основании представленного материала были взяты международные рекомендации по ведению пациентов с ФП, а также данные ряда современных исследований и собственный клинический опыт лечения аритмий. В статье также рассматриваются вопросы экстренного лечения ФП и выражается точка зрения автора на результаты ряда исследований в этой области аритмологии.

Ключевые слова: фибрилляция предсердий, неотложная терапия, электрическая кардиоверсия, электроимпульсная терапия, фармакологическая кардиоверсия, антиаритмические препараты.

**ATRIAL FIBRILASIYASINI SHOSHLINCH DAVOLASH TAKTIKASI: MUAMMONING
HOZIRGI HOLATI**

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Toshkent viloyati ixtisoslashtirilgan somatik kasalxonasi
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✓ **Rezyume**

Ushbu maqola AF hurujlarini bartaraf etish strategiyasi va taktikasi, farmakologik kardioversiya (PCV) va elektr impuls terapiyasi (EIT) ko'rsatkichlari bo'yicha zamonaviy qarashlarni taqdim etadigan adabiy sharhdir. Taqdim etilgan material asosida AF bilan og'rigan bemorlarni boshqarish

bo'yicha xalqaro tavsiyalar, shuningdek, bir qator zamonaviy tadqiqotlar va aritmiyalarni davolash bo'yicha o'zimizning klinik tajribamiz ma'lumotlari olingan. Shuningdek, maqolada AF ni shoshilinch davolash masalalari muhokama qilinadi va ushbu aritmologiya sohasidagi bir qator tadqiqotlar natijalariga muallifning nuqtai nafari ifoda etilgan.

Kalit so'zlar: atriya fibrillatsiya, shoshilinch terapiya, elektr kardioversion, elektr impuls terapiyasi, farmakologik kardioversiya, antiaritmik dorilar.

Introduction

Atrial fibrillation (AF) is one of the most common tachyarrhythmias, the detection rate of which in the general population is 1.0-2.0%. In 20% of cases, it is the cause of all strokes, associated with an increase in mortality and the risk of developing chronic heart failure. Attacks of AF paroxysms are often accompanied by a worsening of the patient's condition, hemodynamic instability, which requires emergency medical care.

The tactics of treatment of emergency treatment of AF are based on the choice of the method of cardioversion: electrical cardioversion - electric pulse therapy or pharmacological cardioversion. The alternative to the cardioversion strategy is determined mainly by the severity and duration of the tachyarrhythmia, taking into account the technical capabilities of its implementation. At the same time, it is inappropriate to stop continuously recurrent AF paroxysms, as well as AF paroxysms (in the absence of urgent indications) in patients with a high risk of their recurrence. Moreover, short-term asymptomatic (low-symptom) AF attacks do not require cardioversion.

Our tactics for relieving AF is to choose the EIT method, antiarrhythmic drug and the method of its administration.

To begin with, we have to admit the imperfection of modern methods for assessing the effectiveness of antiarrhythmic therapy based on electrocardiographic criteria (with the exception of implantable loop recorders), as well as their low information content.

An integral component of the diagnosis of AF is an objective assessment of the severity of symptoms directly caused by AF, using the EHRA (European Heart Rhythm Association) scale [16], which resembles the classification of the severity of chronic heart failure by the New York Heart Association (NYHA):

Class I - no clinical signs;

Class II - "moderately severe" symptoms in which normal daily physical activity does not suffer;

Class III - "severe symptoms" in which normal daily activity is reduced;

IV class - "disabling" symptoms in which normal daily activity is impossible.

This scale for assessing the severity of symptoms of heart failure caused by the arrhythmia itself is of practical importance for choosing a treatment strategy: control of sinus rhythm or control of heart rate. This choice is based not only on the subjective opinion and clinical experience of the doctor, but also on objective quantitative criteria. So, if on this scale for assessing the severity of symptoms caused by AF, the patient gains III or IV points, it is advisable to choose the strategy of rhythm control as the initial strategy for his treatment. If a patient scores I or II on the EHRA scale, then the choice of a strategy of controlling the heart rate is justified as an initial strategy for his treatment.

At this stage, it is also extremely important to try to identify the underlying cardiac disease of AF, so that the treatment of AF can be directed to its cause.

Thus, the main points of this stage are the registration of AF using available methods, the identification of the disease underlying the onset of AF, and the clinical assessment of the severity of symptoms associated with the arrhythmia itself (according to the EHRA scale).

The use of one or another antiarrhythmic drug is determined by its efficacy and safety in AF, which in turn depends on a number of factors: the underlying and concomitant diseases, the presence or absence of acute heart failure (AHF), ischemic heart disease (IHD), sick sinus syndrome (SSSU), intraventricular conduction disorders, left ventricular (LV) myocardial hypertrophy. Although the relief of tachyarrhythmias is carried out with one drug, if it is ineffective, EIT should be used. Despite the fact that in most patients, AF paroxysms stop spontaneously during the first hours or days after development, some of them need PCV or EIT. The difference between PCV and EIT is that the former is easier to carry out, since it does not require anesthesia and is less effective than the latter. During and after PCV, ECG monitoring is necessary to detect the proarrhythmic effects of the antiarrhythmic drug, intraventricular conduction and atrioventricular sinus node dysfunctions.

Table 1.

Antiarrhythmic medicines for the relief of		
Medicines	Dose and route of administration	Main side effects
Amiodarone	Intravenous injection of 5 mg / kg over 60 minutes, followed by continuous intravenous administration of 50 mg / h (up to 2.0 g / day)	Bradycardia, hypotension, prolongation of the QT interval, less often tachycardia "pirouette", thromboembolism
Propafenone	Intravenous injection 2 mg / kg in 10 minutes or once 450-600 mg orally	Expansion of the QRS complex, hypotension, atrial flutter with rapid AV conduction

As can be seen from table 1, antiarrhythmic drugs of IC and III classes are used to restore sinus rhythm in patients with AF. The effectiveness of antiarrhythmic medicines is higher in the case of their early prescription after the development of a paroxysmal arrhythmia. PCV is ineffective for AF attacks of more than 7 days. In the case of rapid relief of AF paroxysm, preference should be given to intravenous administration of class 1C antiarrhythmics (propafenone). However, their use is contraindicated in patients with LV systolic dysfunction (LV ejection fraction <40% or CHF) and in acute coronary syndrome (ACS). High stopping efficacy and good tolerance for both intravenous and oral administration have been proven in a number of placebo-controlled studies [1-3]. In 60-79% of intravenous administration of propafenone leads to the restoration of sinus rhythm in patients within 30-90 minutes, and 56-83% of patients with oral administration after 2-6 hours [1, 3, 4]. In the first hours of their use with IV administration of propafenone, the effectiveness in stopping AF is significantly and statistically significantly higher than the effectiveness of amiodarone. When antiarrhythmic drugs of 1A and 1C classes are used in patients with AF / atrial flutter (AF), occurring with a high frequency, it is necessary to first worsen the conduction in the atrioventricular AV node (β -blockers - β -AB, verapamil, diltiazem, cardiac glycosides), as they can significantly increase the ventricular rate. This principle also applies to oral administration of propafenone. For oral relief, 600 mg of propafenone is taken once (for patients weighing less than 60 kg and for elderly patients, 450 mg of the drug is recommended) or 300 mg of flecainide. This method of arresting cardiac arrhythmias with a single oral administration of a "pill-in-pocket" antiarrhythmic is intended mainly for rather rare, mild, but prolonged AF attacks. For AF

duration less than 2 days, sinus rhythm was restored with a single dose of 600 mg propafenone in 74.4% of patients, on average within 2.3 ± 1.9 hours, and in the placebo group it recovered only in 37.5% of patients (period observation - 8 hours) [5]. In the vast majority of cases, a single oral dose of 450-600 mg of propafenone is well tolerated. However, the first dose of the drug for the purpose of stopping AF is recommended to be carried out in the presence of a doctor, and in the future, if no side effects are identified, the patient can do it on his own.

The Food and Drug Administration approved amiodarone for IV use in 1995, initially only for life-threatening ventricular arrhythmias (ventricular tachycardia - VT / ventricular fibrillation). Then he began to be widely prescribed for patients with supraventricular tachyarrhythmias. A meta-analysis of the main six placebo-controlled studies on cardioversion with amiodarone AF showed that a significant difference in the frequency of restoration of sinus rhythm between intravenous amiodarone and placebo did not occur earlier than 6-8 hours ($p = 0.02$) [6]. Based on this, it becomes clear that amiodarone is not the main drug for emergency treatment of AF, because in most cases there is no rapid relief of tachyarrhythmias when administered intravenously (except for patients with CHF and ACS, in which other antiarrhythmic drugs are contraindicated). With intravenous administration, complications from amiodarone are rare: in the first place is arterial hypotension, bradyarrhythmia develops less often and, extremely rarely, polymorphic VT of torsades de pointes. When monitored for 24 hours, the effectiveness of amiodarone exceeds the effectiveness of placebo by 30-45% [1]. It can be used in patients with CHF and IHD, including unstable angina pectoris and myocardial infarction (MI). The procedure for

stopping AF by intravenous administration of amiodarone, recommended in the United States, differs from that used in Europe (it is similar to the scheme for stopping ventricular tachycardia): intravenous administration of 150 mg in 10 minutes, then continuation of intravenous administration at a rate of 1 mg / min for 6 hours, with if necessary, intravenous administration of amiodarone is carried out at a rate of 0.5 mg / minute during the remaining 18 hours of the first day (or until the end of the arrhythmia paroxysm, if it happened earlier) [2]. If intravenous administration of amiodarone lasts more than 24 hours, it is advisable to reduce the rate of its administration to 0.25 mg / min [2]. In addition, unlike the European Society of Cardiology (ESC) [1], experts from the American Heart Association (AHA), American College of Cardiology (ACC), Heart Rhythm Society (HRS) -AHA / ACC / HRS [2] do not recommend IV relief of AF / TP with amiodarone in patients with Wolff-Parkinson-White syndrome (WPW syndrome), considering it as dangerous as digoxin, adenosine and verapamil with diltiazem due to the possibility of a significant increase in ventricular rate (class III: dangerous, level of evidence FROM).

Intravenous propafenone is recommended for cardioversion of newly-onset AF in patients without I A.

Intravenous administration of amiodarone is recommended for cardioversion of recently-onset AF in patients with I A.

A single oral dose of high doses of propafenone may be recommended for some patients without structural myocardial damage to relieve recent AF (provided that the safety of its use must first be verified by a physician) IIa B.

Digoxin (level of evidence A), verapamil, metoprolol (level of evidence B), other β -antibodies (level of evidence C) are not effective for converting AF to sinus rhythm and therefore not recommended III A, B, C

If the strategy of rhythm control in patients with hyperthyroidism and AF is chosen, then before PCF or EIT, it is necessary to normalize the function of the thyroid gland, since otherwise the arrhythmia does not stop or quickly recurs after the restoration of sinus rhythm. When undertaking any therapeutic intervention in pregnant women, it is necessary first of all to assess the risk of side effects in both the mother and the fetus. Flecainide and propafenone are the main antiarrhythmics recommended by ESC for the relief of AF in

pregnant women without organic heart disease [10]. Amiodarone is not recommended for the relief and prophylactic therapy of AF / TP in pregnant women due to severe fetotoxicity. In exceptional cases, it can be used for severe arrhythmia and ineffectiveness or inability to use other antiarrhythmic drugs, as well as EIT (safe for the fetus).

AF is common in patients with valvular heart disease. It is a fairly early manifestation of mitral valve disease. The presence of paroxysmal or persistent AF may be an indication for percutaneous or mitral valve surgery. AF also develops in the later stages of aortic disease. The most acceptable strategy of pharmacotherapy for patients with lesions of the heart valves is frequency control (reduction of heart rate and prevention of thromboembolism), since long-term maintenance of the restored sinus rhythm in them is unlikely. They should be given warfarin to prevent thromboembolism rather than new oral anticoagulants.

If the paroxysm of AF leads to hemodynamic instability, manifested by acute heart failure (cardiac asthma, pulmonary edema), severe symptomatic arterial hypotension or severe anginal pain, emergency EIT is indicated. Conducting PCF, and not EIT in these patients (if there are conditions for its implementation) should be considered as an erroneous action. The initial energy of the discharge of a monophasic current at EIT FP is 150-200 J [11]. After EIT, at least 3-hour electrocardiographic observation and monitoring of hemodynamics are required [1]. When carrying out EIT in patients with an implanted pacemaker (pacemaker) or cardioverter defibrillator (CD), the electrodes should be at least 8 cm away from them (anteroposterior position of the electrodes is recommended), and the functioning of the implanted pacemaker and CD must be carefully checked after the procedure.

The application of a discharge during EIT should be synchronized with the heart's own electrical activity. Preference should be given to devices with a biphasic discharge, because their efficiency is higher than with a monophasic discharge [12]. EIT is contraindicated in patients with digitalis intoxication and hypokalemia. Repeated EIT is not recommended in cases where AF rapidly recurred after the previous restoration of sinus rhythm, despite prophylactic antiarrhythmic therapy. R. Shsam and co-authors [13] believe that EIT in AF is inappropriate or contraindicated in hyperthyroidism, digitalis

intoxication, acute infectious diseases, hypokalemia, decompensated CHF (except for emergencies), contraindications to general anesthesia, paroxysmal recurrent AF with very frequent arrhythmias, the projected life expectancy of the patient is less than 1 year (asymptomatic or oligosymptomatic AF). To this can be added AF attacks with a high risk of their recurrence: sick sinus syndrome, especially in the absence of an implanted pacemaker; a significant increase in the chambers of the heart; history of refractoriness to prophylactic antiarrhythmic therapy. In all of these patients, frequency control may be the optimal treatment tactics.

The success of EIT depends not only on the power of the discharge, the shape of the current, but also on the position of the electrodes and the resistance of the chest. The electrodes should be tightly pressed against the chest, and the discharge should be applied at the time of exhalation. The data of some studies (Botto et al.) [14] indicate that with the anteroposterior arrangement of the electrodes (the right subclavian region and the area under the left scapula), the efficiency of EIT AF is higher than with their anterolateral position (the right subclavian region and area along the mid-axillary line at the level of the apex of the heart). Our clinical experience supports this point of view.

Multivariate analysis showed that independent predictors of successful restoration and maintenance of sinus rhythm are: not very pronounced duration of AF (at least no more than 1 year), small size of the left atrium (diameter within 5 cm), absence of cardiomegaly, young age [1]. When paroxysm of AF lasts more than 48 hours or the time of its onset is unknown, and there is no possibility of performing transesophageal echocardiography (TPEchoCG) before the restoration of sinus rhythm, oral anticoagulants (OAC) should be prescribed for three weeks before and at least four weeks after electrical cardioversion or pharmacological cardioversion, regardless of the presence or absence of risk factors for thromboembolic complications on the CHA2DS2-VASC scale. According to the ESC experts [1], patients with at least one of these risk factors (with the exception of the female sex) should take CBCs after cardioversion for an indefinitely long time (for life). As antithrombotic therapy, the AHA / ACC / HRS recommendations [2] suggest warfarin (maintaining an international normalized ratio at 2.0–3.0) or new oral anticoagulants -

dabigatran, apixaban, rivaroxaban. However, it should be noted that at the time of this writing, only dabigatran and rivaroxaban had clinical evidence of successful (not inferior to warfarin) use in EIT and PCF. The obligatory three-week use of CBCs before cardioversion can be avoided if no intracardiac thrombi are detected with the help of echocardiography (in more than 90% of cases they are localized in the left atrial appendage).

In patients with AF paroxysm duration <48 h, cardioversion can be performed rapidly under the cover of an intravenous infusion of unfractionated heparin (UFH) or subcutaneous administration of low molecular weight heparin (LMWH) [1]. In the presence of risk factors for the development of ischemic stroke and systemic thromboembolism, in the future, patients are advised to use oral anticoagulants for life. Considering the rapid onset of action of new oral anticoagulants (within 2-4 hours) [15], the administration of these drugs in this clinical situation is possible before or immediately after cardioversion without prolonging the administration of unfractionated heparin or low molecular weight heparin [2].

Conclusion

In cases of complicated AF, emergency EIT is naturally not delayed until therapeutic hypocoagulation is achieved, even if the duration of arrhythmia is more than 48 hours. EIT is performed against the background of intravenous infusion of unfractionated heparin or subcutaneous administration of low molecular weight heparin followed by oral anticoagulants for at least 4 weeks.

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CHANGES IN MORPHOMETRIC PARAMETERS OF THE LYMPHOID TISSUE OF THE SMALL INTESTINE IN THE CONDITIONS OF POLYPHARMASIA

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✓ Resume

Various clinical symptoms of inflammatory diseases in combination with the limited possibilities of etiotropic therapy, a large number of symptomatic agents became the causes of polypharmacy. Unreasonable treatment often slows down the natural healing process. Recently, the gastrointestinal tract is considered as an essential component of the general defense of the body. Therefore, without accurate knowledge of the structural features and the effect of drugs on the morphological structure of the small intestine, it is impossible to understand the degree of their participation in the body's defense reactions.

Key words: Morphology, small intestine, lymphoid nodules, anti-inflammatory drugs, polypharmacy.

ИЗМЕНЕНИЯ МОРФОМЕТРИЧЕСКИХ ПАРАМЕТРОВ ЛИМФОИДНОЙ ТКАНИ ТОЛКОЙ КИШКИ В УСЛОВИЯХ ПОЛИПРАГМАЗИИ

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✓ Резюме

Различные клинические симптомы воспалительных заболеваний в сочетании с ограниченными возможностями этиотропной терапии, большое количество симптоматических средств стали причинами полипрагмазии. Необоснованное лечение часто замедляет естественный процесс заживления. В последнее время желудочно-кишечный тракт рассматривается как важнейший компонент общей защиты организма. Поэтому без точного знания особенностей строения и влияния препаратов на морфологическое строение тонкой кишки невозможно понять степень их участия в защитных реакциях организма.

Ключевые слова: морфология, тонкий кишечник, лимфоидные узелки, противовоспалительные препараты, полипрагмазия.

POLIPRAGMAZIYADA LIMFOID TOKMASINING MORFOMETRIK PARAMETRASIDAGI O'ZGARISHLARI

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Buxoro davlat tibbiyot instituti

✓ Rezyume

Yallig'lanish kasalliklarining turli xil klinik belgilari cheklangan etiotrop terapiya imkoniyatlari bilan birgalikda ko'plab simptomatik vositalar polifarmatsiyaga sabab bo'ldi. Asossiz davolanish ko'pincha tabiiy davolanish jarayonini sekinlashtiradi. Yaqinda oshqozon-ichak trakti tanani umumiy himoya qilishning eng muhim tarkibiy qismi sifatida qaralmoqda. Shu sababli, tuzilish xususiyatlari va dorilarning ingichka ichakning morfologik tuzilishiga ta'siri to'g'risida aniq bilimga ega bo'lmasdan, ularning organizmning himoya reaksiyalarida ishtirok etish darajasini tushunish mumkin emas.

Kalit so'zlar: morfologiya, ingichka ichak, limfoid tugunlar, yallig'lanishga qarshi dorilar, polifarmatsiya.

Relevance

Among the immune formations of the digestive system, lymphoid nodules (Peyer's patches) of the small intestine play an exceptional role. They,

like the thymus, amygdala and appendix, belong to the lymphoepithelial organs, in which lymphopoiesis occurs and are in close interaction

with other organs. The intestine in humans and animals occupies a special battle place among internal organs as an ecological cue barrier between exogenous and alimentary substances, providing a variety of contacts of food and immune substances, microbial, fungal, and parasitic and other pathogenic and saprophytic agents in order to maintain optimal homeostasis of the organ- theism of man and animals. An important place in the body's immune system is remove lymphoid formations of the digestive system stem, in particular the small intestine as the most important organ of the gastrointestinal tract. The small intestine is under the central place among the digestive organs with its numerous vital functions. The protective function of the intestine is the main barrier to foreign microorganisms. One of the large peripheral parts of the immune system is the gut-associated lymphoid tissue. The immune structures associated with the mucous membrane are immunologically active tissue. About 80% of all immune cells in the body are associated with the intestinal mucosa. The integrity of the mucosa is one of the main qualities of a healthy body. The use of a large number of drugs can adversely affect the function and structure of the mucous membrane of the small intestine. In the modern world, there is a rapid growth in the creation and implementation of a huge number of medicines in practical health care, which, on the one hand, are capable of curing and / or improving the patient's condition, on the other, causing significant harm to health. The desire to improve the effectiveness of treatment, to help the patient recover from all diseases that have developed in him, inevitably leads to the prescription of a large number of drugs – polypharmacy.

Anti-inflammatory drugs are one of the most commonly used drug groups in medicine. Identifying the side effects of polypharmacy is an urgent problem today. The most famous complication of anti-inflammatory drugs, is manifested by the development of erosions of the mucous membrane and ulcers of the stomach or duodenum, as well as bleeding, perforations and violations of the gastrointestinal tract. Anti-inflammatory drugs are responsible for most episodes of gastrointestinal bleeding. The development of this complication is associated with an increase in the permeability of the intestinal wall, making it less resistant to external factors, and the movement of bacteria and their components with the development of chronic inflammation. The most common manifestation of this pathology is subtle blood loss, the source of which can be difficult to diagnose changes in the mucous membrane of the jejunum and ileum,

leading to the development of clinically severe iron deficiency anemia. However, in some cases, anti-inflammatory drugs enteropathy can manifest as profuse bleeding, bowel perforation, and the development of characteristic annular strictures. But to date, no research has been carried out to determine the effect of anti-inflammatory drugs on the lymphoid structure of the small intestine, namely in a state of polypharmacy with anti-inflammatory drugs, which are used today very often in medical practice.

The aim of this study was to study polypharmacy with anti-inflammatory drugs on the structural and cellular structure of the wall and lymphoid nodules of the small intestine of white rats.

Material and methods

Sexually mature white outbred rats weighing 200-250 g and 5 months of age were used in the research. The experiment was carried out on 46 animals kept in the general regime of the vivarium. For 10 days, the animals were injected enterally through a tube into the stomach with anti-inflammatory drugs at the rate of Plaquenil 6.5 mg/kg, paracetamol 15 mg/kg, aspirin 5 mg/kg, dexamethasone 0.1 mg/kg. All laboratory animals were divided into 4 groups: group 1 - control animals (10 rats) receiving distilled water through a tube, group 2 (12 rats) - laboratory animals that received 2 types of anti-inflammatory drugs (plaquenil, dexamethasone); Group 3 (12 rats) - laboratory animals that received 3 types of anti-inflammatory drugs (plaquenil, dexamethasone, paracetamol); Group 4 (12 rats) - laboratory animals that received 4 types of anti-inflammatory drugs (plaquenil, dexamethasone, paracetamol, aspirin). The material was collected on day 11, after 10 days of drug administration. The animals were slaughtered at the appropriate time in the morning, on an empty stomach by means of instant decapitation under ether anesthesia.

After opening the abdominal cavity, the small intestine was removed. To conduct a morphological study, the mesentery of the small intestine was mobilized (along the intended line of intersection of the intestine), followed by its resection and dissection along the mesenteric edge along the entire length with microscissors. After that, the length of the mesenteric part of the small intestine, the width of the small intestine in the initial, middle and final parts of the mesenteric part of the small intestine were measured with a millimeter ruler. After washing the obtained total preparations of the small intestine in running water, they were stained with hematoxylin - H

(Harris) and clarified with 3% acetic acid, followed by repeated washing of the preparations in distilled water. The number, shape, size of aggregated lymphoid nodules, the distance between aggregated lymphoid nodules, the number of lymphoid nodules in them, and the area of the mesenteric part of the intestine covered with aggregated lymphoid nodules were studied on total macropreps stained with Harris's hematoxylin. Shape, size of lymphoid nodules in aggregated lymphoid nodes, distance between nodules. The number of single lymphoid nodules in 1cm² of the mesenteric area of the small intestine. For the morphological and morphometric study of the mesenteric part of the small intestine and its lymphoid formations, pieces were taken from the initial, middle and final parts of the mesenteric part of the small intestine. Pieces of tissue were fixed in a 10% solution of neutral formalin. After appropriate processing, the material was embedded in paraffin and sections with a thickness of 4-6 µm were prepared, which were stained with hematoxylin and eosin. Sections were examined morphometrically, using an eyepiece micrometer DN-107T / Model NLCD-307B (Novel, China), the thickness of the mucosa, submucosa, muscle and serous membranes of the mesenteric part of the small intestine was measured, especially the places where the lymphoid formations are located.

Results and discussion

Microscopic examination of the middle part of the small intestine of white rats of the control group showed that the mucous, muscular and serous membranes are well developed and have distinct boundaries. The mucous membrane contains villi of large diameter and crypts of smaller diameter. On the surface of the villi and crypts are cylindrical epithelial cells with oval nuclei. Among the epithelial cells are goblet cells, the largest number of which is observed in crypts. According to our results, the study of the middle part of the wall of the small intestine, there is a different degree of morphological changes when exposed to different amounts of drugs. It was found that after exposure to drugs, the size and ratio of structural components in the walls of the small intestine noticeably change. In the mucous membrane of the small intestine of the experimental group of animals, an intense desquamation of epithelial cells into the intestinal lumen was observed at the tops of the villi. The stroma of the villi is edematous, it contains a large number of macrophages and lymphocytes, in some areas, villous necrosis is observed. An increase in the number of goblet cells, an increase in mucus secretion by villous cells and its release in the

intestinal lumen were noted. When analyzing histological preparations, a pronounced heteromorphism of the structure of the villi of the small intestine was noted. The villi were deformed in places. The epithelium covering the villi was edematous and significantly infiltrated with lymphocytes. Most of the epithelial cells showed signs of degenerative changes. Tissue edema was accompanied by local desquamation of epithelial cells. In some places, necrotic changes in the tissue structures of the intestinal mucosa occurred, sometimes penetrating to the muscular and submucosa.

Morphometry of the small intestine wall revealed a decrease in the height of intestinal villi by 11.5% ($P \leq 0.05$) in the second, by 15.2% ($P \leq 0.05$) in the third and by 18.6% ($P \leq 0.05$) in the fourth group, respectively, compared with the control, the depth and width of the crypts also decreased over time in all groups, respectively. The width of the villi in the control group of animals of the middle section of the small intestine is on average 27.15 ± 0.22 . In the second group, the width of the villi decreased on average to 24.01 ± 0.85 , in the third group of animals, on average, the thickness of the villi was equal to 22.01 ± 0.85 and in the fourth group it decreased to 20.21 ± 0.46 µm. When analyzing the thickness of the mucous, muscular and serous membranes, a significant decrease in the thickness of the mucous membrane was noted in comparison with the control, respectively by 13.3% ($P \leq 0.05$), 15.9% ($P \leq 0.05$), 17.5% ($P \leq 0.05$) and 21.36% ($P \leq 0.05$) in the experimental groups, respectively. At the same time, the muscle layer is significantly thinner than in the control group by 7.4% ($P \leq 0.05$), 8.5% ($P \leq 0.05$), 9.2% ($P \leq 0.05$). An increase in the number of goblet cells by 50.14% ($P \leq 0.05$), mainly in the villi, while their average area practically did not change.

When the morphometry of single lymphoid nodules of the initial section of the mesenteric part of the small intestine of 5-month-old rats was in the range of 13.6 ± 0.7 per 1 cm² of the intestinal area, their sizes range from 0.1x0.1 mm to 0.16x0.16 mm. Pronounced changes were noted in the fourth group, namely, the size of single lymphoid nodules was reduced by 15% ($P \leq 0.05$). In the second and third groups, the size of single lymphoid nodules in the initial section of the mesenteric part of the small intestine did not decrease significantly. In the middle part of the mesenteric part of the small intestine, the number of single lymph nodules per 1 cm² of the area fluctuated on average - 17.0 ± 0.5 , with dimensions from 0.1x0.1 mm to 0.19x0.19 mm. In the second and third groups, the size of single lymphoid

nodules in the middle part of the small intestine also decreased not significantly. After using 4 types of anti-inflammatory drugs, the number of lymphoid nodules did not change but the sizes were reduced by 12% on average ($P \leq 0.05$). In the distal part of the small intestine, the number of single lymphoid nodules was on average 23.4 ± 1.2 per 1 cm² of intestinal area. The sizes of single lymphoid nodules in this section are 0.1×0.1 mm to 0.21×0.21 mm. In the second and third groups, the size of single lymphoid nodules in the distal part of the small intestine decreased by 2.5%. Changes in the size of lymphoid nodules in the fourth group were reduced by 8% ($P \leq 0.05$), respectively.

The group of lymphoid nodules were located along the antimesenteric wall of the small intestine and their number throughout the intestine fluctuated on average - 15.0 ± 0.45 . In the proximal mesenteric part of the small intestine, the number of group plaques varied on average - 2.3 ± 0.2 , their size on average - 1.5 ± 0.6 mm x 1.35 ± 0.32 mm. In the second and third groups, after the use of two and three types of anti-inflammatory drugs, the sizes of group lymphoid nodules in the proximal part of the small intestine did not decrease significantly and the number of lymphoid nodules did not change. The dynamics in the fourth group showed the most pronounced changes. The size of the group of lymphoid nodules averaged 1.2 ± 0.13 mm x 1.1 ± 0.2 mm. In the middle section of the mesenteric part of the small intestine on average - 3.7 ± 1.2 , and their sizes varied on - 1.35 ± 0.23 mm x 1.58 ± 0.18 mm. The sizes of group of lymphoid nodules in the fourth group averaged 1.12 ± 0.3 mm x 1.0 ± 0.64 mm. But in the second and third groups, the size of the group of lymphoid nodules in the middle part of the small intestine did not decrease significantly. In the distal mesenteric part of the small intestine the group of lymphoid nodules, 5-month-old rats of the control group are located on average - 9.1 ± 0.52 . The sizes of group of lymphoid nodules in dynamics in the second and third groups also decreased not significantly, but in the fourth group it was reduced and averaged 1.25 ± 0.32 mm x 1.3 ± 0.52 mm. The total area of group plaques of the small intestine along its length varied on average - 118.7 ± 0.23 mm² and after treatment, decreased by 12% ($P \leq 0.05$).

Conclusions

As a result of studies in the wall of the small intestine of rats treated with anti-inflammatory drugs, changes of a destructive nature were found, depending on the use of the amount of drugs. Destructive changes are characterized by edema of the stroma of the villi, their desquamation into the intestinal lumen, a decrease in the height of the

villi, which were clearly observed in the fourth group when using four types of anti-inflammatory drugs. At the same time, the observed increase in the number of goblet cells in the villi. Presumably, this is due to an increase in degenerative processes in epithelial cells under the influence of polypharmacy.

Polypharmacy also negatively affected to the number and size of single lymph nodes. Lymphoid nodules react to polypharmacy with anti-inflammatory drugs with a decrease in size. The size of group lymph nodes and the size of lymphoid nodules in them against the background of polypharmacy decreases, which depends on the dose and time of use. It was found that with polypharmacy, the distance between the group lymphoid nodes decreases due to a decrease in size. With polypharmacy, the area of the small intestine covered with lymphoid nodules decreases, in contrast to the control group (by 12%), which indicates a decrease in the functional activity of the intestinal lymphoid tissue after exposure to four types of anti-inflammatory drugs.

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✓ *Resume*

Objective: to study clinical and hemodynamic changes during vasopressor therapy in acute myocardial infarction complicated by cardiogenic shock. **Materials and methods:** In 2018-2020, 78 patients treated with "acute myocardial infarction complicated by cardiogenic shock" in Bukhara took part in our study. branch of the Republican Scientific Center for Emergency Medicine. To assess the effectiveness of norepinephrine and dopamine, patients were divided into 2 groups: 30 patients of group 1 were prescribed norepinephrine (norepinephrine 0.2% - 8 mg 4.0 ml) intravenously as an infusion of 3-5 μg / kg / min for 24 hours); In 48 patients of the 2nd group, dopamine (dopamine 40 mg / ml - 4% -5.0 ml) was injected intravenously at an initial dose of 2-10 μg / kg / min for 24 hours, starting with blood pressure (A / B) ... , ventricular systole (YQS), pulse controlled infusion.

Results: deviation of the QT interval was within the normal range (91 ± 15 ms) in 12 patients before infusion, while in the rest of the patients it was 60 cm (48 ± 10 ms). After infusion, they were 42 ± 10 ms in 18 patients and 82 ± 18 ms in 12 patients. QT length remained virtually unchanged after norepinephrine infusion, but QT interval variance decreased from 73.8 ± 8.5 ms to 65.7 ± 5.05 ms.

Conclusion. In acute myocardial infarction complicated by cardiogenic shock, vasopressor therapy should be started immediately in case of relief of shock. This, in turn, prevents an increase in mortality among patients.

Key words: Cardiogenic shock, Acute heart failure, acute myocardial infarction

ОСОБЕННОСТИ ЛЕЧЕНИЯ ОСТРОЙ СЕРДЕЧНОЙ НЕДОСТАТОЧНОСТИ

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✓ *Резюме*

Цель: изучить клинико-гемодинамические изменения на фоне вазопрессорной терапии при остром инфаркте миокарда, осложненном кардиогенным шоком. **Материалы и методы:** В 2018-2020 гг. В нашем исследовании приняли участие 78 пациентов, пролеченных с «острым инфарктом миокарда, осложненным кардиогенным шоком» в Бухаре. филиал Республиканского научного центра экстренной медицины. Для оценки эффективности норадреналина и дофамина пациенты были разделены на 2 группы: 30 пациентам 1-й группы назначен норадреналин (норадреналин 0,2% - 8 мг 4,0 мл) внутривенно в виде инфузии 3-5 мкг / кг / мин в течение 24 часов.); У 48 пациентов 2-й группы дофамин (дофамин 40 мг / мл - 4% - 5,0 мл) вводили внутривенно в начальной дозе 2-10 мкг / кг / мин в течение 24 часов, начиная с артериального давления (А/В) ..., систола желудочков (YQS), инфузия с пульсом.

Результаты: у 12 пациентов до инфузии отклонение интервала QT было в пределах нормы (91 ± 15 мс), у остальных - 60 см (48 ± 10 мс). После инфузии они составили 42 ± 10 мс у 18 пациентов и 82 ± 18 мс у 12 пациентов. Длина QT практически не изменилась после инфузии норадреналина, но дисперсия интервала QT уменьшилась с $73,8 \pm 8,5$ мс до $65,7 \pm 5,05$ мс.

Заключение. При остром инфаркте миокарда, осложненном кардиогенным шоком, вазопрессорную терапию следует начинать немедленно, в случае купирования шока. Это, в свою очередь, предотвращает рост смертности среди пациентов.

Ключевые слова: кардиогенный шок, острая сердечная недостаточность, острый инфаркт миокарда.

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✓ Rezyume

Maqsad: kardiogen shok bilan murakkablashgan o'tkir miokard infarktida vazopressor terapiyasi paytida klinik va gemodinamik o'zgarishlarni o'rganish. **Materiallar va usullar:** 2018-2020 yillarda bizning tadqiqotimizda Buxoroda "kardiogen shok bilan murakkablashgan o'tkir miokard infarkti" bilan davolangan 78 bemor ishtirok etdi. Respublika shoshilinch tibbiy yordam ilmiy markazi filiali. Norepinefrin va dofamin samaradorligini baholash uchun bemorlar 2 guruhga bo'lingan: 1-guruhdagi 30 bemorga norepinefrin (norepinefrin 0,2% - 8 mg 4,0 ml) vena ichiga 24 soat davomida 3-5 mg / kg / min infuziya shaklida buyurilgan.); 2-guruhdagi 48 bemorda dopamin (dopamin 40 mg / ml - 4% -5.0 ml) qon bosimi (A / B) dan boshlab 24 soat davomida 2-10 mg / kg / min boshlang'ich dozada vena ichiga yuborildi.) ..., qorincha sistolasi (YQS), puls bilan boshqariladigan infuziya.

Natijalar: infuzionidan oldin 12 bemorda QT oralig'ining og'ishi odatdagi diapazonda (91 ± 15 ms), qolgan bemorlarda esa 60 sm (48 ± 10 ms). Infuzionidan so'ng ular 18 bemorda 42 ± 10 ms, 12 bemorda 82 ± 18 ms. Norepinefrin bilan infuzionidan so'ng QT uzunligi deyarli o'zgarmadi, ammo QT oralig'i dispersiyasi $73,8 \pm 8,5$ msdan $65,7 \pm 5,05$ msgacha kamaydi.

Xulosa. Kardiogen shok bilan murakkablashgan o'tkir miokard infarktida shok yengillashganda darhol vazopressor terapiyasini boshlash kerak. Bu, o'z navbatida, bemorlar orasida o'limning ko'payishiga yo'l qo'ymaydi.

Kalit so'zlar: Kardiogen shok, O'tkir yurak etishmovchiligi, o'tkir miokard infarkti

Relevance

Today, despite the development of the medical field and the rapid growth of the pharmaceutical industry, one of the most serious complications of acute myocardial infarction is mortality after cardiogenic shock. Moderate acute myocardial infarction (OMI) is complicated by cardiogenic shock (CS) in 20-30% of cases [3,4].

It is known from scientific sources that the death rate from KS has reached 30-40%. This is now one of the global problems of the health care system [3].

The main objectives of treatment of such patients are to achieve the most optimal and long-term stability, ie to reduce stagnation in the small circulation, improve tissue perfusion, stop the progression of heart failure, reduce clinical symptoms, prevent heart failure, increase physical tolerance, prevent target organ complications, hospitalization aimed at reducing place-days and reducing mortality among these patients [4].

Therefore, shock treatment should focus on the choice of vasopressor, infusion therapies, and organ preservation. With this in mind, the right choice of vasopressor therapy in the treatment of shock dramatically reduces mortality [2].

Purpose: To study the clinical and hemodynamic changes in the background of vasopressor therapy in acute myocardial infarction complicated by cardiogenic shock.

Materials and methods

Our research involved 78 patients treated with a diagnosis of "acute myocardial infarction complicated by cardiogenic shock" in the Bukhara branch of the Republican Scientific Center of Emergency Medicine in 2018-2020. All patients

were prescribed additional vasopressor therapy in addition to standard therapy (anticoagulants, antiaggregants, nitrates, glucocorticosteroids, diuretics, and thrombolytics as directed).

In order to evaluate the effectiveness of norepinephrine and dopamine, patients were divided into 2 groups:

Of the 30 patients in group 1, 18 were males, mean age 72.4 ± 3.5 . Patients in this group were treated for an average of 9.8 ± 3.1 days. This group of patients was prescribed norepinephrine (Norepin 0.2% - 8 mg 4.0 ml) intravenously in a 3-5 mcg / kg / min infusion for 24 hours);

The clinical and demographic symptoms of patients in group 2 were as follows: 44 had a history of arterial hypertension (AG), 29 had a history of QD type 2, 25 had a history of post-infarction cardiosclerosis, 10 had a history of atrial fibrillation, and 45 had chronic heart failure (CHF). made. In all patients, total cholesterol in the blood was higher than 6.2 mm / l. In 48 patients in group 2 with anterior wall and 36 patients with posterior wall OMI, the initial dose of dopamine (dopamine 40 mg / ml - 4% -5.0 ml) was administered intravenously at a dose of 2-10 mcg / kg / min. Blood pressure (A / B), ventricular systole (SVS), and pulse-controlled infusion were administered for 24 h.

Biochemical analysis of blood was performed on the basis of lipid spectrum (low density lipoprotein, high density lipoprotein, triglycerides, total cholesterol), glucose, urea, creatinine in all patients and renal glomerular filtration rate ml / min / 1.73 m2 MDRD formula in all patients:

- for men $186 \times (\text{amount [mg / dl]} 1,154) \times (\text{age});$

- for women $186 \times (\text{creatinine in the blood [mg / dl]} \times (\text{age}) \times 0.742$.

Renal insufficiency Kidney ball filtration rate $<90 \text{ ml / min / } 1.73 \text{ m}^2$ was calculated.

The mean age of the 78 patients involved in the study was 66 ± 4.5 years. Of these, 52 are male and 26 are female.

Result and discussion

Of these, 64 (82%) cases had a history of arterial hypertension, type 2 diabetes mellitus 43 (55%), harmful habits - smoking 40 (51%), hypercholesterolemia 58 (74%) cases (Table 1). All patients were monitored during treatment. The mean day spent in the hospital was 10 ± 3.4 days.

Patients in the group were not given b-blockers and APF-inhibitors because they further reduced renal function in a state of shock. In all other patients, nitrates, diuretics, a group of inotropic drugs, anticoagulants, antiplatelet agents, statins, hormones, and vasopressors were recommended as directed. Thrombolytic therapy (TLT) was performed in 14 patients (17%) with streptokinase.

Signs of ectopic activity remained virtually unchanged before and after infusion. No arrhythmias were recorded before and after the infusion according to their statistically significant nature and severity. The QT interval variance exceeded 100 ms.

Table 1

Indicators of comorbidities and harmful habits of the studied patients, n = 78

Indicators	Absolutely	%
Arterial hypertension	64	82%
Type 2 diabetes	43	55%
Smoking	40	51%
Hypercholesterolemia	58	74%

Patient buirak koptokchallari faitatsiosining tezligaigan and Kana creatinine noted oshmanling. A group of 35% of patients 3 kunlik belinnik bilan, 28% and 2 rublik, 37% and 1 kunlik inherited nasavat kilgan. The left Lynch Otilish faction (FV) analyzed the FV<35% from Holland, FV 35% dan 50% annual bulgani 16% cases and FV>51% bolgani 6% cases of the Kan mark.

The patient is a blocker of lar and an ACE inhibitor of berylmagan, because ular shiktagtagazy buirakada funciycini Jan pasaytadi. The Barbara grappa stratiotlag template is mainly nitratlar, diureticlar, inotrope dori shortalar group, anticoaguantlar, antiagantlar, statinlar, gorno-badakhshar and vasaprosorlar recommended by Kan.

The fact that the renal capillary filtration rate ($<48 \text{ mL/min/1.73 M}^2$) was lower was due to the high content of creatinine in the blood, which led

No deepening of ischemia in the myocardium was observed during and after the infusion.

Lower renal glomerular filtration rate ($<48 \text{ ml / min / } 1.73 \text{ m}^2$) led to higher creatinine in the blood, which made the clinical course more severe. Lethality was also reported in 17% of cases below renal glomerular filtration rate $<48 \text{ ml / min / } 1.73 \text{ m}^2$.

QT interval variance was within normal values ($91 \pm 15 \text{ ms}$) in twelve patients prior to infusion, while in the remaining patients they were 60 cm ($48 \pm 10 \text{ ms}$). After infusion, they were $42 \pm 10 \text{ ms}$ in 18 patients and $82 \pm 18 \text{ ms}$ in 12 patients. QT length remained almost unchanged after norepinephrine infusion, but QT interval variance decreased from $73.8 \pm 8.5 \text{ ms}$ to $65.7 \pm 5.05 \text{ ms}$.

Proarrhythmic feature: 6 patients had nocturnal left ventricular potential before norepinephrine administration, no condition was observed after infusion.

No differences in clinical-dermographic age, sex, harmful habits, and obesity were identified among the groups undergoing vasopressor therapy. General blood analysis, biochemical analysis, blood clotting time, blood coagulation system, and general urine analysis were performed.

to a more severe course of the clinic. Lethality was also noted in 48% of cases of renal capillary filtration below $<1,73 \text{ mL/min/17 m}^2$.

Differences between clinically-dermographic age, gender, harmful habits, and obesity were not identified among the groups undergoing vasopressor therapy. Conducted general blood analysis, biochemical analysis, blood clotting time, blood clotting system and general urine analysis.

Proarithmic feature: norepinephrine had the potential of the left ventricle in the evening in 6 patients before Administration, this condition was not observed after infusion.

No significant changes in heart rate and blood pressure were observed prior to infusion. An increase in the number of heart contractions during the infusion, in turn, increased the oxygen demand of the myocardium (average 10 beats /

min, arterial pressure an average of 11 mm.sim.ust.).

Against the background of the infusion in all patients diminished wheezing in the lungs was sharply reduced, blood pressure was elevated, the symptoms of shock were eliminated.

In 12 patients before infusion, QT interval dispersion was among the normal parameters (91 ± 15 MS), in the remaining patients they were 60 cm (48 ± 10 MS). In 18 patients after infusion, they consisted of 42 ± 10 MS, in 12 patients 82 ± 18 MS. The length of QT after norepinephrine infusion was almost unchanged, but the QT interval dispersion decreased from $73,8 \pm 8,5$ MS to $65,7 \pm 5,05$ MS.

Signs of combing from ectopic activity almost did not change before and after the infusion. Arrhythmias were not recorded before and after the infusion, according to their statistically significant character and the degree of severity .

During and after infusion, there was no exacerbation of ischemia in the myocardium.

Patients in this group before the infusion consisted of 40% and the last measurement in the diastole period (KDR) 5,5 CM.

Initial doses of dopamine required higher doses in 5 mcg/kg/min 36 patients, 6-7 mcg/kg/min 6 patients and 8-10 mcg/kg/min and more than 6 patients.

Before the start of the infusion, no visible changes in yuks and AB were observed. And the increase in inflammation during the infusion, in turn, increased the need for oxygen of the myocardium (on average 10 PCs/min, on average 11 mm of a/B.the SIM.top.).

Against the background of infusion, steamed wheezing in the lungs in all patients was sharply reduced, elevated A/B, shock symptoms were eliminated.

Infusion of norepinephrine reached $36,2 \pm 2,1\%$ after shock elimination, if FV was $43,1 \pm 3,2\%$ before infusion of FV. After the infusion, there were no outbreaks and relapse of the zones.

After the infusion of dopamine, FV practically did not change, it was $33,7 \pm 1,7\%$ before the infusion, while after the infusion it showed $34,3 \pm 1,9\%$ ($p=0,8$). Kengay of the ischemic zones after infusion from ExoKG were noted in 21 patients, as well as 3 cases of letalysis were noted above..

The general condition of the patients improved: 26 patients were relatively well (+2), 8 patients were significantly better (+3), 9 patients were partially better (+1) and decreased airway intensity (+3) in 16 patients, and +2 It was

observed in 22 patients. Unfortunately, 6 lethal cases were reported.

Proarithmic feature: before and after the infusion of dopamine, the evening potency of the ventricles was not noted.

Expansion of the zones was observed in 21 patients, as well as 6 lethal cases were noted above.

Factors leading to cardiogenic shock (age, type 2 diabetes mellitus, history of myocardial infarction, bad habits, symptoms of chronic heart failure) and their atherosclerotic lesions of coronary arteries were studied, analyzed and evaluated

There was a more severe course in patients with non-clinical manifestations, harmful habits (smoking, drinking) in OMS with Type 2 QD. Another age was one of the risk factors that remained unchanged, causing a more severe course of the disease in elderly and elderly people.

In our study, lethality was studied by comparing vasopressor therapy (dopamine and norepinephrine). In the group receiving infusion of dopamine, then 3 cases of 1 capsaicin and infusion of norepinephrine were recorded, in the group receiving infusion of 1 capsaicin. Letallic dopamine is slightly higher than norepinephrine, it was interpreted as on account of deep necrosis of the myocardium. That is, it is necessary to take into account both the proarithmic and cardiotoxic effect of vasopressors, taking into account these, further examination is required.

This study aimed to improve systolic and diastolic function of the heart before infusion. This is indicated based on the results of a clinical examination. Systolic function has been shown to improve as a result of vasopressor therapy. With an increase in diastolic function with prednagruzka and a decrease in calcium in the cytoplasm, further vasodilation indicates an improvement in blood circulation in the ischemic zone of the myocardium.

After norepinephrine infusion, the visibility of the normal contraction segment increased (from 66.7% to 81.8%) and the hypo- and akinesia segments decreased. In all indicators, indicators in the middle segments were higher than in the basal segments. Such efficacy has been shown in some literature to be associated with better blood circulation in the middle segment.

Diastolic function improved in all segments after infusion. Improved myocardial contractility is associated with myocardial activity in the hibernated state. This property of norepinephrine has been reported in many studies [5, 6].

No group ventricular extrasystole or significant arrhythmias were observed during infusion. No ventricular nocturnal potential was noted in our study, which is related to the antiischemic property of norepinephrine.

The low incidence of eruption fraction in patients led to a more severe course of clinical trials. And this is due to the fact that the cause of severe exacerbations of CSH is a decrease in the function of the heart contractions, early application of patients, prevention of ischemia zone kengay, it is for this purpose that it is desirable to start vasopressor therapy more quickly. It not only raises arterial pressure, prevents ischemia, which in turn prevents lethality.

In patients undergoing Thrombolytics, the use of small doses of vasopressor therapy was sufficient, but also the cause of complications with a cardiac shock in acute myocardial infarction may be that fibrinolytic therapy was not conducted on time, but it is desirable to conduct it according to the instruction.

In our observation, high indicators of creatinine clearance have been noted for the severe course of the disease, and even in cases of death, high levels of creatinine are noted. This requires a deeper study of the interconnectedness of these.

In our study, lethality was studied by comparison of vasopressor therapy (dopamine and norepinephrine). The lethality is slightly higher than that of dopamine compared to norepinephrine, which has been interpreted as due to deep necrosis of the myocardium. That is, the proarrhythmic and cardiotoxic effects of vasopressors should also be taken into account, and further investigations should be taken into account.

The effectiveness of norepinephrine vasopressor therapy with norepinephrine in acute heart failure is evidently improved in the patient's condition. Symptoms such as heart palpitations, a sense of air deficiency, hangover in patients were not observed from 2.5 ± 1.3 days. In this group of patients, cardiac shock was eliminated on average in 3.4 ± 2.3 days. symptoms of acute heart failure after elimination of shock symptoms re-acute myocardial infarction relapse was not observed.

Conclusions

1. When eliminating shock in acute myocardial infarction complicated by cardiac shock, vasopressor therapy is the drug of choice. This in turn prevents an increase in the incidence of death among patients.

2. In acute myocardial infarction, the importance of vasopressor therapy is important, since it provides for hypoperfusion in tissues. In addition to increasing arterial pressure, dopamine can be called tachycardia, which further increases the need for oxygen in the myocardium, deepens ischemia. Norepinephrine does not affect the number of heart contractions and, in turn, raises arterial pressure, with the same it is considered preferable to dopamine.

3. The absence of recording of the evening potency of the left ventricle of the heart, QT interval dispersion and ectopic activity of the ventricles is indicative of the proarrhythmic positive effect of norepinephrine.

4. It was noted that in the infusion of dopamine (from 5 mcg/kg/min) increased myocardial contraction and increased the number of ventricular extrasystoles.

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**FEATURES OF THE SPREAD OF SECONDARY DISABILITY DUE TO ARTERIAL
HYPERTENSION IN THE KHOREZM REGION**

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✓ **Resume**

One of the most important and serious medical and social problems is hypertension and its spread in the developed countries of the world, including our republic, as well as in the Khorezm region, where our research was carried out, where there was some unfavorable situation in relation to the environment.

In many scientific studies, only the epidemiology of arterial hypertension is indicated, special attention is paid to the clinical issues of its occurrence, but scientific materials on the degree of prevalence of disability associated with arterial hypertension have not been found.

The main goal of the study is to study and evaluate the occurrence and prevalence of secondary disability in patients suffering from arterial hypertension in the Khorezm region. The study revealed that hypertension is widespread in rural areas and it has a tendency to increase. It requires special attention that the highest rates of secondary disability in both rural and urban areas are in the 51-60-year-old age group.

Keywords: Arterial hypertension, disability, rehabilitation work, prevalence, working capacity, quality of life, mortality.

**ОСОБЕННОСТИ РАСПРОСТРАНЕНИЯ ВТОРИЧНОЙ ИНВАЛИДНОСТИ ПРИ
АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИИ В ХОРЕЗМСКОЙ ОБЛАСТИ**

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✓ **Резюме**

Одной из важнейших и серьезных медико-социальных проблем является артериальная гипертензия и ее распространение в развитых странах мира, в том числе в нашей республике, а также в Хорезмской области, где проводилось наше исследование, где сложилась неблагоприятная ситуация в мире. отношение к окружающей среде.

Во многих научных исследованиях указывается только эпидемиология артериальной гипертензии, особое внимание уделяется клиническим вопросам ее возникновения, но научных материалов о степени распространенности инвалидности, связанной с артериальной гипертензией, не найдено. Основная цель исследования - изучить и оценить возникновение и распространенность вторичной инвалидности у пациентов, страдающих артериальной гипертензией в Хорезмской области. Исследование показало, что артериальная гипертензия широко распространена в сельской местности и имеет тенденцию к увеличению. Особого внимания требует тот факт, что самый высокий уровень вторичной инвалидности как в сельской, так и в городской местности приходится на возрастную группу от 51 до 60 лет.

Ключевые слова: артериальная гипертензия, инвалидность, реабилитационная работа, распространенность, трудоспособность, качество жизни, смертность.

**XORAZM VILOYATIDA ARTERIAL GIPERTENSIYADA IKILAMCHI
NOGIRONLIKNING UCHRASHI TAHLILI**

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Toshkent tibbiyot akademiyasining Urganch filiali

✓ **Rezyume**

Eng muhim va jiddiy tibbiy-ijtimoiy muammolardan biri bu gipertoniya va uning dunyoning rivojlangan mamlakatlarida, shu jumladan respublikamizda tarqalishi, shuningdek bizning tadqiqotlar olib borilgan Xorazm viloyatida, ba'zi noqulay holatlar bo'lgan joyda. atrof-muhit bilan bog'liqligi.

Ko'pgina ilmiy ishlarda faqat arterial gipertenziya epidemiologiyasi ko'rsatiladi, uning paydo bo'lishining klinik masalalariga alohida e'tibor beriladi, ammo arterial gipertenziya bilan bog'liq nogironlikning tarqalish darajasi to'g'risida ilmiy materiallar topilmadi.

Tadqiqotning asosiy maqsadi Xorazm viloyatida arterial gipertenziya bilan og'rigan bemorlarda ikkilamchi nogironlikning paydo bo'lishi va tarqalishini o'rganish va baholashdir. Tadqiqot natijasida gipertenziya qishloq joylarda keng tarqalganligi va uning o'sish tendentsiyasiga ega ekanligi aniqlandi. Ham qishloqda, ham shaharda ikkinchi darajali nogironlikning eng yuqori ko'rsatkichlari 51-60 yoshdagi yosh guruhiga to'g'ri kelishiga alohida e'tibor talab etiladi.

Kalit so'zlar: Arterial gipertenziya, nogironlik, rehabilitatsiya ishlari, tarqalishi, ish qobiliyati, hayot sifati, o'lim.

Introduction

The widespread prevalence of diseases of the cardiovascular system, including arterial blood pressure, among the population, is one of the processes that seriously jeopardize people's lives. In most countries, 55-56% of the cause of death, and 46% of disability (55% in Uzbekistan) correspond to diseases of the same class.

In our republic, too, the average life expectancy of people has increased, especially after independence, and it has a tradition of growth. With the increase in the number of elderly people, it is possible to observe an increase in the prognosis of diseases of the circulatory system, especially hypertension, and this requires an in-depth scientific analysis and evaluation of the issue before the health system, as well as improvement of its profile, early diagnosis.

According to the results of a study conducted in 45 countries of the world, in 2002, 972 million hypertensive patients were registered in the land registry in 2025, according to forecasts, this figure is 1.6 by 2025 mlrd.ni it is expected to organize. Scientists explain this situation with an increase in the number of adults of the same age, and it is predicted that their number (65 and above) will increase by 2030 year to 2 mihrab.

The prevalence of hypertension among women is to some extent related to the number of pregnancies and births. In those who gave birth to three children, this figure was 24,9%, in six – 26,8%, and in ten – 38,4%. Even in women who have had an abortion, a convincing increase in hypertension was observed (42,2%). Among those who did not observe the status of abortion, the rate was equal to -29,3% ($R=0,005$).

This, in turn, requires greater attention to the population of the city and its lifestyle in improving the profile of hypertensive disease. Despite the fact that the complications of the

disease are significantly more severe, 58.9% of patients after medical and social rehabilitation with the say movement of doctors in treatment-prophylactic institutions were found to be suitable for Labor, 27% of patients were third and 13.9% of patients went out to II group disability, despite the hard actions taken.

Almost in most countries, the main part of the diseases of the circulatory system is blood pressure (melancholy) (later referred to as hypertension) and ischemic diseases of the heart. Arterial hypertension and, as among a dozen of its consequences, disability, definitely occupies a special place, which has a negative impact, first of all, on the normal life of the patient [1]. It was found that in some countries of the world with high labor productivity, 50% of people over 60 years of age were diagnosed with arterial hypertension. In the countries of Eastern Europe and Russia, an increase in the level of mortality, disability and stroke was found, which was 40.8% for men and 45.4% for women. [2].

According to research by L. E. Kuzmishin and others (2004) in the Russian Federation, the ratio of patients with arterial hypertension increased from 22,783 to 44,262 by 2002. In the same period, this figure increased from 3.45% to 6.98% among pensioners. It has significantly increased among the rural population-by 1.8 times, the main part of which was disabled people of group II. Among patients suffering from diseases of the circulatory system, 90-95% are patients with a diagnosis of arterial hypertension. The study of mortality among people diagnosed with diseases of the circulatory system showed that the highest level is mortality with a diagnosis of "Arterial hypertension". [4].

In 2010, 7634.4 cases of cardiovascular disease were recorded in every 100,000 adult population of the Republic, 40,6% of which was

hypertension (up to 3099.7) disease. This figure is equal to 33.1% in the Khorezm region, with every 100000 population – 3159.1 hypertensive patients registered. In Uzbekistan, the death rate from hypertension in 2009 was 17.7%. The number of recorded patients with hypertension increased by 1.4 mihrab in 2010 compared to 2005

According to the data of the cardiology center of the Republic of Uzbekistan, it is noted that the prevalence of hypertension is equal to 26.6% in the city, 14.4% in the village, as well as to 12.6% among men and 15.7% in women.

The severity of the course of hypertension and some of its complications is, again, its occurrence in most cases in combination with Ischemic heart disease and according to the results of a scientific study conducted by others (2015) in Tashkent, in 40-89-year-old population 64.2% of cases, hypertension was associated with another Ischemic heart disease.

Old population. In the remaining young groups, its difference is not so great. According to the results of the study conducted in the Novogorod region, the prevalence rate of hypertensive disease is 46,8%, on average, 7% higher than in Russia. Understand this situation with excess body weight in people. Especially its high level is observed in 60 – 69 years of age, with excessive body weight in women and the degree of hypertensive disease is noted to be 1,5 marotaba higher than in men.

In the majority majority literature it is noted that hypertension is more prevalent in older adults than it is exceeded by an increase in age. Its prevalence rate is 60 – 65%, in some cases 70% and above, especially among the population aged 55 and 60 - 65 years. Especially at this age, they note the fact that hypertension is combined with other concomitant diseases (Ischemic heart disease, diabetes, diseases of the endocrine glands), and in these cases the effectiveness of treatment is relatively low, as well as the course of the disease with irreversible complications

According to the scientific findings of others (2015), the prevalence rate of hypertension in the city of Tashkent was 35,7%, including 28,1% in men, 40,6% in women, and its increase was a convincing increase of 8,2% among the population of the population aged 20 – 29, 70 and over – 71,9% among adults.

The prevalence rate of the disease was 48.0%, the rate of its I was 24.7 %, the rate of II was 15.4 %, the rate of III was 7.3%. Another feature of hypertension is its relatively high incidence of adverse effects on the quality of life and lifestyle of patients. In the first place, the

disease negatively affects the physical, mental management, life, social activity, general health, feelings and psyche of the patient, and, most importantly, mental health, mood.

One of the reasons that cause hypertension in the Republic of Kazakhstan is the increase in excess body weight. Uttered in schools showed that 14,4% of schoolchildren found body weight available. In 7 classes 19% of ida, from 11 classes-30,4 ida, among adults 10% of IDA risk in 9 people, and in 7 classes -14,3% ida, in 11 classes -21,7% ida depression was observed and was registered as a predisposition to hypertensive disease. According to the results of separate scientific studies, after medical and social rehabilitation measures, 58.8% of patients recovered their ability to work, 27% of patients identified the III group of disability, 13.9% of patients identified the II group of disability.

If the prevalence rate of hypertensive disease in the Republic of Tajikistan is 15-24 years old - 4.7% in men, 25-34 years old – 5.5%, 35-44 years old – 16.0%, when observed an increase in age, this indicator in women is suitable 4,4%, 7,0%, 18,9%, 28,9%, and aged equal to 47,6 %.(2015)

In many studies analyzed literature, it is noted that the prevalence of hypertension among women, as well as women and children of the age of fertil, is even more frequent than in men. Although in men, the level of risk factors is relatively high, the prevalence of hypertension in women is shown with special emphasis in many literature

According to the World Health Organization, due to maternal mortality, hypertension is the second leading cause of morbidity after embolism and accounts for about 20 – 30% of maternal mortality. In developed countries, hypertension is noted in 5 – 15% of pregnant women. Currently, 41,1% of women with hypertension are observed and one of the most common diseases in diseases of the circulatory system is brought to take the first place for the causes of disability and death. It is noteworthy that in women who gave birth to diseases of the circulatory system, more than threeeraydi

On materials of the studied literature determined that many scientific studies reported only the epidemiology of hypertension, special attention was given to clinical questions when it occurs, however, the scientific material on the incidence of disability associated with hypertension, almost was not detected.

The main purpose of our study is to study and evaluate the occurrence and prevalence of

secondary disability in patients suffering from arterial hypertension in the Khorezm region.

Material and methods

In order to study secondary disability due to arterial hypertension in the Khorezm region, extracts of patient reports from the medical labor expert Commission (MLEC) of two rural localities in the Khazarasp and Yangibazar districts and Urgench registered in the period 2014-2018 were studied, which amounted to an average of 747 patients, 582 of them received secondary disability.

Sanitary-statistical and social-hygienic methods were used for research and statistical processing of the obtained data.

Result and discussion

In the study of statistical data for 2014-2018, 582 cases were registered, which amounted to 77.9% of people with disabilities due to arterial hypertension, i.e. 49.7 ± 2.05 cases for every 10,000 population. We consider it appropriate to note that these indicators are significantly higher than those described in the studied literature. Primary disability is $22.08 \pm 1.37\%$ of the total disability.

According to the results of the study, secondary disability due to arterial hypertension in men was 63.5%, for every 10,000 – 63.76, in women (36.5%) - 36.0, which in General in men,

secondary disability was shown to be higher by 1.8 times. This makes it possible to confirm that arterial hypertension is more widespread in men than in women. The presence of secondary disability due to arterial hypertension up to 20 years has not been registered. Also, there were no disabled groups I and II of men and women under the age of 30. It was confirmed that secondary disability in the population of both sexes also increases due to the increase in age to 60 years. It is reliably established that a high level of it is reached by the age of 51-60 years in men-375.0, in women-278.0 (per 10,000 population of these populations). We pay special attention to the fact that secondary disability (in men – 76.8%, in women – 96.4%) is observed among the able-bodied population, many of whom have completely or partially lost their ability to work, but do not need outside help. From the studied literature, it is reliably confirmed that many people with group II disability, after a number of rehabilitation measures, have improved their performance and can engage in easier work activities. In our study, it was determined that none of the disabled people were engaged in any kind of work at all. It was found that after the age of 60, the disability of patients in both sexes decreased due to their quality of life. This is especially evident for women who are aged 51-60 years, which is 278.0, and for women over 60 years old, it has decreased to 22.6.

Table 1

Prevalence of secondary disability in different sex populations by age (per 10,000 population) (P±m)

Gender	Age						Total
	up to 20 years	21-30	31-40	41-50	51-60	older than 60	
Men	-	3,94± 2,2 2,3± 1,55	5,7± 2 ,51	288,0 ±4,61	375,0 ±4,44	242,1 ±3,73	63,7 ± 3,30
Women	-		10,8 ±3,41	136,4 ±4,26	278,0 ±4,73	22,6 ± 2.8	36,0 ± 3,26
Total	-	3,12 ± 1,87	8,25 ±2,96	182,2 ±4,43	326,5± 4,58	132,35±3,26	49,85±2,88

Data from table 1 show that at the age of 21-30 years and from 41-50 years-in 1.7, at the age of 51-60 years – in 1.3, at the age of 60 years - in 10.7 times secondary disability is more common in men than in women. Therefore, it is necessary to study in depth the social and hygienic conditions of the main prerequisites for the occurrence of arterial hypertension in men.

When studying secondary disability due to arterial hypertension among all disability groups of both populations, the main part falls on the II

disability group. As a result, for secondary disability, it is 90.7% for men and 85.4% for women. Group III disability is 7.0% for men and 3.6% for women. The specific weight of group III disability is 1.9%, 1.2%.

According to the results of scientific research conducted in the European part of the Russian Federation, the prevalence rate of GK is 39.7%, it is noted that it is equal to I – 49.2%, II – 29.4% and III - 14.1% .

Table 2

Prevalence of secondary disability due to arterial hypertension among disability groups (per 10,000 population) (P±m)

Age	Men			Women		
	I	II	III	I	II	III
up to 20 years	–	–	–	–	–	–
21 - 30	–	–	–	–	–	–
31 - 40	–	3,94± 1,7	–	–	2,4± 0,6	–
41- 50	0,3 ± 0,3	4,75±1,29	0,3± 0,03	–	9,75±1,82	1,1±0,05
51 - 60	2,0 ± 0,3	207±4,5	19,0± 1,7	2,5± 0,6	116,5±3,74	17,1±1,73
older than 60	8,3 ± 1,3	338± 4,84	27,6±2,3	2,9±0,74	232.9±3,94	42 ± 2,44
	7,8 ± 2,7	220± 3,74	19 ± 2,33	–	22,6 ± 2,44	–
Total	1,2±0,07	57,8±3,14	4,5±1,34	0,43±0,01	30,0 ± 2,74	4,7 ± 1,1

In this situation, we draw attention to the fact that 98-90% of patients with secondary disability of group II due to arterial hypertension have a complete or partial loss of performance, this is a consequence of inadequate rehabilitation work with patients. We draw your attention to the fact that the transition of disabled people from one group to another has not changed during the studied years, the dynamics of recovery of patients and the transition from one group with

an increased risk of disability to another with a reduced risk of secondary disability has not changed in a positive way. As previously stated, in a number of disability groups, the highest rate is typical for the age group of 51-60 years, in particular, this is typical for men. When studying the place of residence of patients with disabilities, a number of characteristic features were also revealed.

Table 3

Conditions of prevalence of secondary disability due to arterial hypertension in urban and rural areas

Place of residence	Men			Total	Women			Total
	I	II	III		I	II	III	
town	1,4 ±0,45	37,8±2,35	5,1±0,86	45,1±2,57	0,5±0,26	28,0±2,0	9,4±1,16	38,0±2,34
village	1,25±0,48	83,0±3,93	6,0±1,06	90,4±4,10	0,25±0,021	36,15±2,57	2,3±0,65	28,9±3,80

The table shows that the city has a high level of disability group I for men, and disability group III for women. Group II disability is more common in rural areas: men (83.0±3, 93) – 2.2 times, women (36.15±2.57) - 1.3 times. If we take secondary disability due to arterial hypertension, we find that both populations have significantly higher disability in rural areas and,

accordingly, it is revealed that both men and women have twice as high disability. From the above, we conclude that in rural areas, arterial hypertension is widespread and has a tendency to increase. It requires special attention that the highest rates of secondary disability in both rural and urban areas are in the 51-60-year-old age group.

Conclusions

1. In the Khorezm region, secondary disability due to arterial hypertension per 10,000 population is 56.7 ± 3.10 . Its prevalence is significantly higher than the data described in the literature we studied.

2. It was determined that secondary disability due to arterial hypertension in men (63.7 ± 3.30) compared to women (36.0 ± 2.46) is 8.1 times greater, in rural areas (78.3 ± 3.80) compared to cities (38.0 ± 2.34) was significantly higher.

3. The study of secondary disability due to arterial hypertension in a number of populations has shown that the highest level is in the age category of 51-60 years and accounts for 51% of the total number of registered disabled people. 75-80% of the disabled correspond to the able-bodied population.

4. The main part (89-90%) of secondary disability due to arterial hypertension was made up of group II invalids, among whom 99.1% previously also had group II disability.

5. It is significant that during all the years of the study, there were no significant changes in the disabled groups, which, in turn, requires special attention to strengthen rehabilitation measures for patients with arterial hypertension.

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THE METHOD OF TREATMENT OF URETEROLITHIASIS BY THE METHOD OF CONTACT LITHOTRIPSY

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✓ Resume

During contact lithotripsy, 35 patients in 24 (68.6%) patients, taking into account the combination of ureteral stones with large or multiple small kidney stones, long-term presence of a stone in the lumen of the ureter, migration of fragments of urate stones during contact ureterolithotripsy into the calyx-pelvic system kidney, surgery was completed with the installation of an internal stent. The undoubted advantage of contact lithotripsy is the possibility of establishing a final diagnosis during the operation (if the nature of the ureteral obstruction is unclear), as well as the possibility of installing an internal stent for more effective litholytic therapy (in the presence of stones in the contralateral kidney) and anti-inflammatory therapy (in the presence of inflammatory changes in the place standing stone).

Keywords: urolithiasis, ureterolithiasis, contact lithotripsy, stent, contralateral kidney, litholytic therapy.

СПОСОБ ЛЕЧЕНИЯ УРЕТЕРОЛИТИАЗА МЕТОДОМ КОНТАКТНОЙ ЛИТОТРИПСИИ

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✓ Резюме

При контактной литотрипсии 35 пациентов из 24 (68,6%) пациентов с учетом сочетания камней мочеточника с большими или множественными мелкими камнями в почках, длительного наличия камня в просвете мочеточника, миграции фрагментов уратных камней. При контактной уретеролитотрипсии в чашечно-лоханочную систему почки операция завершилась установкой внутреннего стента.

Несомненным преимуществом контактной литотрипсии является возможность установления окончательного диагноза во время операции (если характер обструкции мочеточника не выяснен), а также возможность установки внутреннего стента для более эффективной литолитической терапии (при наличии камней в контралатеральной почке) и противовоспалительная терапия (при наличии воспалительных изменений на месте стоящего камня).

Ключевые слова: мочекаменная болезнь, уретеролитиаз, контактная литотрипсия, стент, контралатеральная почка, литолитическая терапия.

URETEROLITIAZISNI KONTAKT LITOTRIPSIYASI USULI BILAN DAVOLASH USULI

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✓ Rezyume

Kontakt litotripsiya paytida, ureteral toshlarning katta yoki ko'p miqdordagi mayda buyrak toshlari bilan birikishini, siydik chiqarish yo'lida uzoq vaqt tosh borligini, urat toshlari parchalarining migratsiyasini hisobga olgan holda, 24 ta bemorda (68,6%) 35 bemor. buyrakning kalik-tos suyagi tizimiga ureterolitotripsi bilan aloqa qilish paytida operatsiya ichki stent o'rnatilishi bilan yakunlandi. Kontakt litotripsiyaning shubhasiz afzalligi - operatsiya davomida yakuniy tashxis qo'yish (agar siydik chiqarish yo'llarining obstruktsiyasi xususiyati noaniq bo'lsa), shuningdek litolitik terapiyani yanada samaraliroq qilish uchun ichki stent o'rnatish imkoniyati (toshlar mavjud bo'lganda). qarama-qarshi buyrakda va yallig'lanishga qarshi terapiya (joyda turgan toshda yallig'lanish o'zgarishi mavjud bo'lganda).

Kalit so'zlar: urolitiyoz, ureterolitiyaz, kontakt litotripsi, stent, qarama-qarshi buyrak, litolitik terapiya.

Introduction

Modern medicine has a whole arsenal of conservative, operative and combined methods of treatment of urate urolithiasis [2, 3, 4, 7, 14, 16]. Selection method for treating a multifactorial and determined by the number of stones, the localization of stones, their size and shape, the terms disease, presence const utstvuyusch s urinary tract infections, functional sposobnos tew kidneys, presence of concomitant their diseases, general condition of the patient, the anatomy of the upper urinary tract and other features of the [1, 8, 9, 10, 11, 12]. The increase in the incidence of urate urolithiasis is explained by the increased influence of a number of unfavorable external environmental en viron mental factors on the human body: physical inactivity leading to impaired phosphorus-calcium metabolism, increased consumption of protein products and alcohol, the use of certain drugs [2, 5, 6, 7].

In the structure of urolithiasis, an increase in the incidence rate of urate urolithiasis has been noted in recent years. If in the 50s of the 20th century it ranged from 5 to 10%, now the number of patients with urate urolithiasis is up to 20% of the total number of patients with urolithiasis [1, 2, 3, 4,

6]. It is important to note that it is possible to carry out treatment for both emergency and planned indications [5, 6, 13, 15, 17].

Purpose of the study: to identify the features of the treatment of ureterolithiasis in contact lithotripsy.

Material and methods

This group consisted of 35 patients who underwent contact ureterolithotripsy of ureteral stones. Of 35 patients, 24 (68.6%) were men and 11 (31.4%) women. The age of the patients ranged from 28 to 75 years. In 13 (37.1%) patients, left-sided urolithiasis was detected; right-sided urolithiasis was detected in 11 (31.4%) patients, bilateral urolithiasis in 11 (31.4%) patients.

Result and discussion

During the examination, in 15 (42.8%) patients, urate stones were localized in the upper third of the ureter, in 9 (25.7%) in the middle third of the ureter, and in 11 (31.4%) in the lower third of the ureter. The size of the analyzed ureteral stones varied from 7 to 20 mm. The distribution of patients by stone size depending on localization in different parts of the ureter is shown in Table 1.

Table 1

Distribution of patients by stone size depending on localization

The size of stone	Up to 1.5 cm	1.1-1.5 cm	More than 1.5 cm
Localization of stone			
upper third of the ureter	4	8	3
middle third of the ureter	1	7	1
lower third of the ureter	3	8	0
Total	8	23	4

The table shows that in the bulk of patients - 23 (65.7%), the sizes of ureteral stones ranged from 1.0 to 1.5 cm. In 7 (20.0%) patients, ureteral stones were combined with stones in the collecting system kidney, 3 (8.6%) had a combination of calculi and calculi with stones in the calyx - pelvic system of the contralateral kidney. The combination of ureteral stones with single

or multiple stones of both kidneys was observed in 10 (28.6%) patients, and 15 (42.8%) patients had single ureteral stones.

20 patients had previously undergone various methods of surgical interventions - data on them are given in Table 2. Table 2 shows that 15 patients in anamnesis denied the presence of various methods of surgical intervention.

Table 2.

Previously transferred surgical interventions

The nature of the operations performed	Number of patients	
	Absolute	%
Endoscopic operations	10	28,5
DLT	4	11,4
Open surgical interventions	6	17,1
Lack of urological surgeries	15	42,8
Total	35	100

Recurrence of the disease was noted in 24 (68.6%) patients, 11 (31.4%) patients had stones for the first time. 21 (60.0%) patients had previously received litholytic therapy, 14 (40.0%)

patients had a history of spontaneous stone passage. Table 3 shows the distribution of patients according to the duration of the disease with urate urolithiasis.

Table 3.

Distribution of patients by the duration of the disease with uratelithiasis

Duration of the disease, in years	Number of patients	
	absolute	%
less than a year	11	31.4
From 1 to 5 year	14	40.0
From 6 to 10 year	5	14.3
More than 10 year	5	24.3
Total	35	100

28 (80.0%) patients were admitted to the clinic on an emergency basis, 7 (20.0%) patients were admitted as planned, during outpatient examination they revealed ureteral stones. 16 (57.1%) patients admitted on an emergency basis, and 1 (14.3%) patient admitted routinely due to renal colic, as well as an incipient pyelonephritis attack, underwent kidney

drainage by applying percutaneous puncture nephrostomy.

Upon receipt of urine in the sediment, uric acid salts were detected in 28 (80.0%) patients, and in 7 (20.0%) patients, no salts were detected in the urine sediment. The distribution of patients by urine acidity is shown in Table 4.

Table 4.

Distribution of patients by urine acidity on admission

Urine acidity	Number of patients	
	absolute	%
5.0-5.5	18	51.4
5.6-6.0	14	40.0
More than 6.0	3	8.6
Total	35	100

Table 3 shows that in 32 (91.4%) patients the urine reaction was acidic, and only in 3 (8.6%) patients the urine reaction was neutral. A bacteriological study of urine was performed in 24 (68.6%) patients, of which in 17 (70.8%) patients, urine obtained by nephrostomy drainage served as the material for the study, in 7 (29.2%) patients with spontaneous urination.

According to the bacteriological examination of urine, *Pseudomonas aer* was detected in four (16.7%) patients, Two (8.3%) patients revealed *Escherichia coli*, one (4.2%) patients revealed *Staphylococcus spp*, In 17 (70.8%) patients in the urine culture growth of bacteria have been identified.

All patients with bacteriuria received appropriate therapy according to the antibiogram.

Contact ureterolithotripsy was performed in planned patients, as well as in emergency patients after stopping the attack of pyelonephritis. It should be noted that this type of surgical intervention was used for technical (impossibility of removing the stone into the focus of the shock wave) and anatomical contraindications (overweight of the patient - more than 100 kg) to remote ureterolithotripsy, as well as for additional diagnostic purposes. All patients underwent surgery satisfactorily. At the same time, in 24 (68.6%) patients, given the combination of ureteral stones with large or multiple small kidney stones, long-term presence of a stone in the lumen of the ureter, migration of urate stone fragments during contact ureterolithotripsy into the calyx-pelvic system of the kidney, surgery was finished with the installation of an internal stent.

In 4 (11.4%) patients with stones in the upper third of the ureter and in 2 (5.7%) patients with stones in the middle third of the ureter during contact ureterolithotripsy, the bulk of large fragments of urate stones migrated into the collecting system of the kidney, and therefore he underwent distance lithotripsy in the postoperative period.

A total of 35 patients underwent 35 contact ureterolithotripsy, and 6 patients in the postoperative period underwent remote lithotripsy of calculus fragments migrated during

contact ureterolithotripsy into the collecting system of the kidney.

It should be added that in all 17 (100.0%) patients who underwent percutaneous puncture nephrostomy to arrest the attack of pyelonephritis, after contact ureterolithotripsy, the nephrostomy drainage was removed in the immediate postoperative period.

The period of stay of patients in the clinic was 17.5 ± 1.53 days ($p < 0.05$). The spectral composition of the removed stone fragments was studied in 28 (75.0%) patients, the data are shown in Table 5.

Table 5.

The chemical composition of stones in patients after contact ureterolithotripsy

Chemical composition of stones	Number of patients	
	Absolute	%
Anhydrous uric acid	13	46,4%
Uric acid dihydrate	4	14,3%
Ammonium urate	5	17,9%
Mixed composition of stones	6	21,4%
Total	28	100

Of six (21.4%) patients with a mixed composition of stones, in four cases there was a combination of anhydrous uric acid and ammonium urate, and in two cases, a combination of anhydrous uric acid and uric acid dihydrate.

In the postoperative period, out of 24 patients in whom contact ureterolithotripsy ended with the installation of an internal stent catheter, 4 (16.7%) had a clinical manifestation of reflux into the kidney, another 2 (8.3%) patients had dysuria, these complications in all patients docked conservatively.

Conclusion

1. By contact ureterolithotripsy is the method of choice for the treatment of ureteral uric acid stones if you can not conduct remote ureterolithotripsy.
2. The undoubted advantage of lithotripsy is a possibility of installing in the operation of the final diagnosis (when unclear nature ureteral obstruction), and the ability to install an internal stent for better holding litholytic therapy (in the presence of stones in a counter lateral bud) and anti-inflammatory therapy FDI (in the presence of inflammatory changes in the place where the stone stands).

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QUESTIONED SURVEY OF THE TREATMENT OF PATIENTS WITH URATE LITHIASIS

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✓ Resume

Using a questionnaire survey of 145 patients with uratelithiasis who underwent examination and treatment in the urology department of the AGMI clinic in the period from 2017 to 2020, it was found that the most effective litholytic therapy for stones consisting of anhydrous uric acid and uric acid dihydrate up to 1.5 cm - 90.5% and 87.5%, respectively. With stones consisting of ammonium urate, the dissolution efficiency was 20.0%.

Key words: urolithiasis, urateurolithiasis, ureterolithotripsy, litholytic therapy, stone density.

РЕЗУЛЬТАТЫ АНКЕТИРОВАНИЯ БОЛЬНЫХ С МОЧЕКАМЕННОЙ БОЛЕЗНИ

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При анкетном опросе 145 больных урателитиазом, прошедших обследование и лечение в урологическом отделении клиники МИГА в период с 2017 по 2020 годы, установлено, что наиболее эффективна литолитическая терапия камней, состоящая из безводной мочевой кислоты и дигидрата мочевой кислоты. до 1,5 см - 90,5% и 87,5% соответственно. Для камней, состоящих из урата аммония, эффективность растворения составила 20,0%.

Ключевые слова: мочекаменная болезнь, уратуролитиаз, уретеролитотрипсия, литолитическая терапия, плотность камней.

BUYRAK TOSH KASLLIGI DAVOSIDAN KEYINGI SO'ROVNOMA NATIJALARI

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2017 yildan 2020 yilgacha bo'lgan davrda AGMI klinikasining urologiya bo'limida tekshiruv va muolajadan o'tgan uratelitiyozli 145 bemorni so'rovnomasidan foydalanib, suvsiz siydik kislotasi va siydik kislotasi dihidratidan iborat toshlar uchun eng samarali litolitik terapiya aniqlandi. 1,5 sm gacha - mos ravishda 90,5% va 87,5%. Ammoniy uratdan iborat toshlar bilan eritish samaradorligi 20,0% ni tashkil etdi.

Kalit so'zlar: urolitiyoz, urateurolitiyaz, ureterolitotripsi, litolitik terapiya, tosh zichligi.

Relevance

In the structure of urolithiasis, an increase in the incidence rate of urate urolithiasis has been noted in recent years. If in the 50s of the 20th century it ranged from 5 to 10%, now the number of patients with urate urolithiasis is up to 20% of the total number of patients with urolithiasis [1, 2, 3, 4, 6]. The increase in the incidence of urate urolithiasis is explained by the increased

influence of a number of unfavorable external environmental and mental factors on the human body: physical inactivity leading to impaired phosphorus-calcium metabolism, increased consumption of protein products and alcohol, the use of certain drugs [2, 5, 6, 7]. Selection method for treating a multifactorial and determined by the number of stones, the

localization of stones, their size and shape, the terms disease, presence const utstuvuyusch s urinary tract infections, functional sposobnos tew kidneys, presence of concomitant their diseases, general condition of the patient, the anatomy of the upper urinary tract and other features of the [1, 8, 9, 10, 11, 12]. Modern medicine has a whole arsenal of conservative, operative and combined methods of treatment of urate urolithiasis [2, 3, 4, 7, 14, 16].

Objective of the study: a questionnaire survey of the treatment of patients with urate lithiasis.

Material and methods

The material of the study was retrospective and prospective clinical and laboratory-instrumental data on 145 patients with urate lithiasis who were examined and treated in the urology department of the ASMI clinic in the period from 2017 to 2020 years.

Of the 145 patients, 87 (60.0%) were men and 58 (40.0%) were women. The age of patients ranged from 17 to 79 years, in the most mature and socially active age (from 21 to 60 years) there were a significant number of patients - 100 (68.9%), and 86 (59.3%) patients were older 50 years old .

To monitor the effectiveness of litholytic therapy in urate nephrolithiasis, ultrasound was used, which was performed in all 92 (100.0%) patients. Even in 15 (16.3%) patients was performed with spiral computed tomography definition m density urate stones of units Hounsfieldu, which allows to determine not only urate nature of the stone, but also to assume

a more particular its composition. Examination of patients with uratelithiasis , in order to determine the optimal method of treatment, began with the examination of the patient and clarification of anamnestic data. As part of this work, patients with urateurolithiasis filled out a questionnaire , in which, along with general data (age, weight and height, hereditary history, observation and treatment by a urologist at the place of residence, the presence of harmful production and occupational hazards, the onset and duration of uratelithiasis , primary or recurrent nature of the disease, stone passage in history, the presence of previous surgeries on the kidneys and the urinary tract by about uric acid stones, the incidence of inflammation in the kidney, the presence and severity of concomitant diseases), their adherence to a particular diet has been studied in detail and the nature of the diet. This questionnaire was filled out by 145 (100.0%) patients and significantly facilitated the assessment of the effectiveness of the litholytic therapy carried out or previously carried out in combination with the prescribed diet. When analyzing anamnestic data, 35 (24.1%) patients noted the presence of one or another form of urolithiasis in the immediate family (parents, brothers and sisters). 101 (69.6%) patients had a recurrent nature of the disease, which occurred in the period from 6 months to 10 years or more, while 51 (50.5%) patients had a recurrence of uratelithiasis during the first 5 years, in 27 (26.7%) patients within 6-10 years, and in 23 (22.8%) patients a relapse occurred after 10 years. When studying the duration of the disease with urateurolithiasis , the following data were obtained (Table 1).

Table 1.

Distribution of patients by disease durationuratelithiasis

Duration of the disease, In years	Number of patients	
	Absolute	%
Up to 1 year	32	22,1
From 1 to 3 years	37	25,5
From 4 to 6 years	31	21,4
From 7 to 10 years	21	14,5
From 10 and more	24	16,5
Total	145	100

Result and discussion

To monitor the effectiveness of litholytic therapy in urate nephrolithiasis, ultrasound was used, which was performed in all 92 (100.0%) patients. Even in 15 (16.3%) patients was performed with spiral computed tomography definition m density urate stones of units Hounsfieldu , which allows to determine not only urate nature of the stone, but also to assume a more particular its composition.

The results of the study showed that most often stones were localized in the calyces of the lower segment - in 49 (33.8%) patients, then in the pelvis - in 43 (29.6%) patients, in the calyces of the middle segment - in 31 (21.4 %) patients. %) of patients, in the cups of the upper segment - in 19 (13.1%) patients. Ureteral stones were most often localized in the upper third - in 29 (20.0%)

patients, then in the lower third - in 19 (13.1%) patients, and in the middle third of the ureter - in 12 (8.3%) patients.

Table 2.

Distribution of patients with urate lithiasis by localization of stones

Localization of stones	Number of patients	
	absolute	%
Pelvis	12	8.3
Cup (combination of cup groups)	48	33.1
Pelvis + uppersegmentcalyces	1	0.7
Pelvis + cups of medial segments	3	2.1
Pelvis + cups of the lower segment	10	6.9
Pelvis + combination of cup groups	11	7.6
Upper third of the ureter	13	8.9
Middle third of the ureter	5	3.4
Lower third of the ureter	10	6.9
Combination of kidney and ureteral stones	32	22.1
Total	145	100

All patients were divided into 2 main groups: the first group included 85 (58.6%) patients with stones localized within the renal pyelocalicealsystem, the second group consisted of 60 (41.4%) patients with ureteral stones, as well as a combination of localization of stones in the lumen of the ureter and in the kidney. Of 60 patients in the group with ureteral stones, 35 (58.3%) underwent contact ureterolithotripsy and 25 (41.7%) remote ureterolithotripsy.

It should be noted that 5 (3.4%) patients arrived at the clinic with initially only the kidney - 3 (60.0%) patients removing the contralateral kidney was performed in connection with acute obstructive pyelonephritis, due occluding stone, y 1 (20.0%) of the patient - for terminal

hydronephrosis, and in 1 (20.0%) patient - due to rupture of the kidney. Among patients with urateurolithiasis, 31 (21.3%) had abnormalities in the development of the kidneys and upper urinary tract (kidney cyst, double kidney, horseshoe kidney and others), information about these anomalies is presented in Table 3. As can be seen from Table 3, renal cysts predominated among the kidney anomalies, the double kidney accounted for 19.5%, the rest of the kidney anomalies accounted for 16%. 74 (46.8%) patients had previously undergone various methods of surgical interventions - data on them are given in Table 3. Table 4 shows that 78 patients in the anamnesis denied the presence of various methods of surgical interventions.

Table 3

Anomalies of kidney development in patients with urateurolithiasis

The character of anomaly	Number of patients	
	absolute	%
Horseshoe kidney	2	6,4
Double kidney	6	19,5
Lumbar dystopy	1	3,2
Nephroptosis	2	6,4
Kidney cyst	20	64,4
Total	31	100

Of 60 patients in the group with ureteral stones, 35 (58.3%) underwent contact ureterolithotripsy and 25 (41.7%) remote ureterolithotripsy.

It should be added that this group did not include patients who underwent conservative therapy and who had stones independently. Of the 85 patients in the first group, 20 (23.5%) underwent extracorporeal lithotripsy as monotherapy, and another 65 (76.5%) patients received litholytic therapy. Remote lithotripsy in

the form of monotherapy was performed due to snowfall or the inability of patients to conduct complex litholytic therapy in full. The group of patients receiving litholytic therapy additionally included 27 patients with a combination of ureteral and renal stones - they underwent surgery for ureteral stones followed by dissolving therapy for kidney stones. Of the 92 patients treated litholytic therapy, 20 (21.7%) was subsequently performed remote lithotripsy, 4 (4.3%) patients underwent Perk secret nephrolithotripsy, 6 (6.5%) patients

pyelolithotomy. Total 145 patients fulfilled 4 percutaneous nephrolithotripsy 6 pyelolithotomy, 41 contactureterolithotripsy, Session 92 remote lithotripsy.

Of the 145 patients, 78 (53.8%) were admitted to the clinic on an emergency basis and, due to complications of urate lithiasis (renal colic, pyelonephritis attack), received emergency care, up to drainage of the kidney and various methods of surgical interventions. The remaining 67 (46.2%) patients were admitted as planned in the primary order, as well as after inadequate or ineffective litholytic therapy, while stones were detected in them at the prehospital stage during examination. It should also be noted that out of 67 patients, 8 (11.9%) had previously been admitted to other medical institutions on an emergency basis, and after stopping renal colic they were transferred to the category of planned patients and sent to our clinic to determine the treatment tactics.

It was found that in 8 patients the chemical composition of the stone was represented by anhydrous uric acid and uric acid dihydrate, the density of stones in them was 338 ± 4.5 HU. In 4 patients, the chemical composition of stones was represented by ammonium urate, the density of stones was 364 ± 5.6 HU.

A month after complex litholytic therapy, complete dissolution of kidney stones was achieved in 56 (60.8%) patients. In another 6 (6.5%) patients, partial dissolution of stones was achieved, in connection with which they continued litholytic therapy for another month, after which they also achieved complete dissolution of stones. Thus, stone dissolution was achieved in 62 (67.4%) patients.

The distribution of patients by efficiency litholytic therapy depending on the size of the stones and drenirova Nia kidney shown in the table.

Table 4.

The effectiveness of litholytic therapy in patients depending on from the method of kidney drainage

Stonesize	Number of patients with undrained kidney	Number of patients with kidney drained catheter - stent	Number of patients with drained nephrostomy kidney
upto 1.5 cm	21 (65.6%)	13 (81.2%)	2 (28.6%)
morethan 1.5 cm	15 (65.2%)	11 (78.6%)	-

As can be seen from the table, the most effective litholytic therapy turned out to be the most effective for kidney stones both up to and more than 1.5 cm - in the group of patients with an undrained kidney, it was 62.5% and 65.2%, respectively, in the group of patients with a drained internal catheter. Kidney stent - 81.2% and 85.7%, respectively.

It should be noted that out of 92 patients who received litholytic therapy with citrate mixtures, 8 patients had side effects in the form of gastrointestinal disorders (flatulence, diarrhea, heartburn), these phenomena were arrested conservatively.

It should also be noted that 30 patients who received litholytic therapy suffered from gout. When taking citrate mixtures, no patient experienced an exacerbation of gout. The undoubted advantages of litholytic therapy include the possibility of carrying it out by the patients themselves, here also lies its main disadvantage - the necessary constant monitoring of the acidity of urine. Only the correct intake of drugs containing citrate mixtures, as well as adherence to a diet aimed at limiting the intake of purines into the body, can dissolve urate kidney stones,

and achieve optimal acidity of urine. Compliance with dietary recommendations by patients, dynamic monitoring of the indicators of purine metabolism and ultrasound monitoring as a simple and non-invasive method of research allows in most cases to prevent recurrence of urate nephrolithiasis.

Conclusion

1. A systematic study of urine acidity in patients with urolithiasis and especially urate lithiasis should become mandatory during litholytic therapy and metaphylaxis. The effectiveness of litholytic therapy of urate lithiasis can only be achieved by developing an individual dosage of citrate mixtures under constant control of urine acidity.

2. The size and chemical structure of urate stones affects the effectiveness of litholytic therapy. The most efficient litholytic therapy was at rocks, consisting of an anhydrous uric acid dihydrate uric acid up to 1.5 cm - 90.5% and 87.5% respectively. With stones consisting of ammonium urate, the dissolution efficiency was 20.0%.

3. The most accurate, objective method for the diagnosis of urate stone, as well as the differential diagnosis of urate lithiasis, especially in case of suspicion of urate stone of the ureter, is a spiral computed tomography.

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HIRUDOTHERAPY. HISTORY AND MODERNITY (Literature review)

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✓ Resume

The article presents the main stages of development and theoretical substantiation of hirudotherapy from ancient times to the present. The historical and empirical basis of the use of hirudotherapy in world practice has been studied. The features of the use of hirudotherapy in different countries (USA, Europe, Russia) at the present time. The therapeutic effects of hirudotherapy in clinical practice are explained by the composition of the saliva of the medicinal leech and the reflex effect on the body at the local and general levels, which occurs at the time of blood sucking and hemorrhage, which is well studied to date. The pathogenetic mechanisms of hirudotherapy action are analyzed. Hirudotherapy is able to reduce the processes of ischemia, hypoxia and normalize microcirculation. An overview of the effective use of hirudotherapy in different groups of patients with cerebrovascular, cardiovascular diseases. The evidence base for the effectiveness of hirudotherapy in cerebrovascular accidents seems to be sufficient to use hirudotherapy as a method of complementary medicine in the complex treatment of cerebrovascular diseases and for the prevention of acute cerebrovascular accidents.

Key words: hirudotherapy; history; hypertonic disease; cerebrovascular disease

ГИРУДОТЕРАПИЯ. ИСТОРИЯ И СОВРЕМЕННОСТЬ (литературный обзор)

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✓ Резюме

В статье представлены основные этапы развития и теоретического обоснования гирудотерапии от древних времен до современности. Изучена историко-эмпирическая база применения гирудотерапии в мировой практике. Изучены особенности применения гирудотерапии в разных странах (США, Европа, Россия) в настоящее время. Терапевтические эффекты гирудотерапии в клинической практике объясняются хорошо изученным на сегодняшний день составом слюны медицинской пиявки и рефлекторным воздействием на организм на местном и общем уровнях, возникающим в момент кровососания и кровопроизведения. Проанализированы патогенетические механизмы действия гирудотерапии. Гирудотерапия способна уменьшать процессы ишемии, гипоксии и нормализовать микроциркуляцию. Дан обзор эффективного применения гирудотерапии в разных группах больных с цереброваскулярными, сердечно-сосудистыми заболеваниями. Доказательная база эффективности гирудотерапии при нарушениях мозгового кровообращения представляется достаточной для того, чтобы использовать гирудотерапию как метод комбинированной медицины в комплексном лечении цереброваскулярных заболеваний и для профилактики острых нарушений мозгового кровообращения.

Ключевые слова: гирудотерапия, история, современное обоснование, применение, гипертоническая болезнь, цереброваскулярные заболевания

HIRUDOTERAPIYA TARIX VA ZAMONAVIY HOLATI (Adabiyotlar sharhi)

Shadmanova L.A.

Tibbiyot xodimlari kasbiy rivojlantirish markazi

✓ Rezyume

Maqolada hirudoterapiyaning qadim zamonlardan to hozirgi kungacha bo'lgan rivojlanishining asosiy bosqichlari va nazariy asoslari keltirilgan. Hirudoterapiyani jahon amaliyotida qo'llashning tarixiy va empirik asoslari o'rganildi. Hozirgi vaqtda turli mamlakatlarda (AQSh, Evropa, Rossiya) hirudoterapiyani qo'llash xususiyatlari o'rganildi. Klinik amaliyotda hirudoterapiyaning terapevtik ta'siri, dorivor sulukning tupurik tarkibi va organizmga mahalliy va umumiy darajadagi refleks ta'siri bilan izohlanadi, bu qonni so'rish va qon ketish vaqtida yaxshi o'rganiladi. sana. Hirudoterapiya ta'sirining patogenetik mexanizmlari tahlil qilinadi. Hirudoterapiya ishemiya, gipoksiya jarayonlarini kamaytirishga va mikrosirkulyatsiyani normallashtirishga qodir. Serebrovaskulyar va yurak-qon tomir kasalliklari bilan og'rigan bemorlarning turli guruhlarida hirudoterapiyadan samarali foydalanishga umumiy nuqtai berilgan. Serebrovaskulyar baxtsiz hodisalarda hirudoterapiya samaradorligi uchun dalillar bazasi serebrovaskulyar kasalliklarni kompleks davolashda va o'tkir miyovaskulyar falokatlarini oldini olishda qo'shimcha tibbiyot usuli sifatida hirudoterapiyadan foydalanish uchun etarli ko'rinadi.

Kalit so'zlar: hirudoterapiya, tarix, zamonaviy mantiqiy asos, qo'llanilishi, gipertoniya, serebrovaskulyar kasalliklar

Introduction

In recent decades, against the background of increasing allergization of the population, polypharmacy, an increase in the number of complications and side effects of pharmacotherapy, a steady increase in the number of chronic diseases, there has been an active search for the possibilities of using various non-drug methods of influencing the human body. Methods that have been successfully applied by our ancestors for millennia are again attracting special attention. One of these methods is hirudotherapy - the use of medicinal leeches for medicinal purposes.

Historical reference

Hirudotherapy is used by mankind for treatment of various diseases for many centuries. One of the earliest documented evidence of use is a painting in an Egyptian tomb, dating from about 1500 BC. e. It is believed that after successful treatment with leeches, the Egyptian queen Cleopatra became pregnant and gave birth to an heir to Caesar (about 50 BC), after which she ordered to depict Egyptian tombs on the walls pharaohs leech. ... The ancient Roman naturalist Pliny the Elder (1st century AD) gave a description of the leech and for the first time noted the positive changes in the human body during the setting of leeches. Following Pliny, he studied the possibilities of the medical use of bloodsucking leeches the largest Roman physician Claudius Galen (131-200 years). Another well-known physician of Ancient Rome, Aetius (335-454), also spoke positively about bloodletting by means of pond leeches. The first detailed recommendations on the use of leeches are given by Abu Ali Ibn Sino (Avicenna). In his brilliant treatise "The Canon of Medicine" in the 22nd paragraph, he writes: "Leeches are good to use for skin diseases, such as scaly, ringworm, red spots on the skin,

freckles and other diseases" [1]. In the Middle Ages, during the time of the Great.

Inquisition, it was forbidden to plant leeches in large quantities.

Another increase in interest in leeches is observed during the Renaissance. This historical period includes the fundamental work of the Armenian physician and naturalist Amirdovlat Amasiatsi (15th century) [2]. Author states: "If you apply it to the scab, it will suck out the spoiled blood, and the ulcer will easily heal ... blood, it will suck it out. In the 16th century in England, doctors did not leave their homes without leeches, and these doctors were even nicknamed leeches, that is, "leeches."

The first official mention of leeches in Russia showed up in the law of the Russian Empire No. 6424 of May 29, 1733: "On the non-obstruction of the students of the Moscow State Hospital to collect herbs and roots and catch piavits in ponds, lakes and the rivers of the Moscow province" [14]. Outstanding doctors of the Russian Empire actively treated with leeches (I.E. Dyadkovsky, M.L. Mudrov).

In 1859 A. Voskresensky published a monograph, dedicated to "medical leeches". Great Russian surgeon N.I. Pirogov (1810-1881) recommended to put up to 200 pieces in one session, which, of course, redundant, but the fact of use is important them leeches in their practice [4].

Until the middle of the nineteenth century, an extraordinary development of hirudotherapy in Europe and Russia. So, more than 100 million leeches were exported from Russia annually, and the income from this trade was correlated with the state's profit from the grain trade as: 1. Poaching and speculation began to flourish in this area, and the export of leeches abroad became so great that in Russia the price of leeches has risen tremendously,

up to 50 kopecks in silver for 1 piece. In France, where hirudotherapy was especially popular, used by up to 50 million leeches annually. It is known from Napoleon's notes that from Hungary alone, 6 million leeches were imported within a year to treat his soldiers army. In the structure of Russian exports, leeches occupied a place equal to cereals, being an important source of income for the state treasury. At the end of the nineteenth century, J. Highcraft (1884) received from the head end of the leech is an active extract that prevents blood clotting, which is called hirudin [20]. Professor G.A.Zakharyin described hirudotherapy as a kind of distracting bloodletting. I.V.Murashev in 1912 discovered hemostatic effect of leeches and recommended hirudotherapy as an "energetic hemostatic agent." Until the 50s The twentieth century saw a rise in interest in hirudotherapy. Research work was carried out in different directions - saliva composition, treatment technique, hirudin was studied. In the USSR over the problem hirudotherapy worked I.L.Blumenthal - in the treatment of embolic processes, P.I. Mlagoblishvili and co-authors - in the treatment of skin diseases, V.V. Orlov - in obstetric and gynecological practice, E.M. Tareev, G.F. Lang - for hypertension and others.

After another decline in interest since the 1980s years, a new stage in the history of hirudotherapy began. In 1985, I.P. Baskova and co-authors discovered the enzyme destabilase in the saliva of a leech and studied in detail the mechanisms of regulation hemostasis and fibrinolysis by salivary secretion the glands of the medicinal leech [6, 7]. In 1984 the medical leech was included in the Red Book, and since 1997, a ban has been introduced on catching these animals from natural reservoirs for the purpose of mass sales. In 1990-1991, the antiseptic effect of medicinal leech saliva was discovered. It turned out that saliva extract is in many ways is similar to antibiotics and at the same time does not have the side effects of the latter.

Scientists from different countries (the largest researchers of hirudotherapy as a non-drug method of treatment are currently A.V. Chernukh, G.I. Nikonov, A.G. Abuladze, S.L. Zaslavskaya, I.N. Shishkina, V.V. Savinova, I.P. Baskov, G.R. Iskhanyan, O. Yu. Kamenev, Yu. Ya. Kamenev, etc.) established: the range of application of hirudotherapy in medicine provides "the content of leeches in saliva, in addition to hirudin, trypsin inhibitors and plasmin, inhibitors of alpha-chymotrypsin, chymosin, subtilisin and neutral proteases of granulocytes - elastase and cathepsin C, an inhibitor of blood coagulation factor Xa and kallikrein blood plasma, highly specific enzymes: hyaluronidase, destabilase, apyrase, collagenase, as

well as a number of compounds of a still unexplored nature, such as leech prostanoids, histamine-like substances and a number of others" (V.A.Savinov, 2002). Interpretation of their biological action is extremely difficult already because each of these substances taken separately, "is able to induce a cascade of events in the system of the internal environment organism and maintain its constancy (homeostasis), and above all at the level of the vascular wall, in hemostatic and immune systems" [17].

Modern research has proven that the leech should be seen as one living, very complex and peculiar nonspecific irritant to the human body in general, and not just a local method of mechanical extraction of blood from capillaries above the corresponding "problem" organ [17].

It is now recognized that leeches are the only means of bloodletting at the level microcirculatory bed (a term introduced in physiology in 1954 thanks to the work of a prominent Soviet scientist A. Chernukh and his school), violations in which underlie tissue damage and organs, their diseases and further the body as a whole, and not just one problem organ. Exactly here important metabolic processes take place processes: delivery of nutrients to cells and tissues through capillaries, arterioles, lymphatic vessels and venules. To this at the end of the XIX and the beginning of the XX century. pointed out physiologists K. Bernard and E. Starling, and our contemporary A.S. Zalmanov he devoted most of his life to the study of microcirculation, considering its disorders "an epiphenomenon of various pictures of diseases, one of the main elements of deep dysfunctions of a sick organism." He first introduced the term "capillaropathy", and for methods of its correction - "capillarotherapy".

In the USA and Europe, leeches are officially used as effective remedy for improving local microcirculation, in microsurgery for transplantation of organs and their parts, skin flaps and with autologous transplantation of traumatically amputated fingers, ears and other parts of the face, since the leech with its enzymes promotes the preservation of the capillaries in a fresh state, preparing them for splicing with capillaries body, and at the same time kills the pathogenic flora that multiplies in the injured area [18,26].

Hirudotherapy is also used in the treatment of osteoarthritis knee joint, providing analgesic effect and improving locomotor function [21].

In China, leeches have been treated since time immemorial patients with atherosclerosis and many other diseases. In Russia, hirudotherapy is most often is a method of treating various somatic diseases of a non-infectious nature.

Hirudotherapy in the treatment of cerebrovascular Noah pathology. The first doctor to investigate the effectiveness of hirudotherapy for concussions brain, was a legendary military field surgeon N.I. Pirogov. In his work "The Beginning of General Military Surgery" he wrote: "How soon it seemed a little paint in the patient's face and the pulse rose, now I am putting leeches behind my ears" [4].

Currently, hirudotherapy is a complementary medicine method. According to the methodological recommendations "Using the method hirudotherapy in practical health care", indications for the use of hirudotherapy are ischemic heart disease, heart insufficiency of 1-2 degrees, atherosclerotic cardiosclerosis, postinfarction cardiosclerosis, cardialgia, discirculatory atherosclerotic encephalopathy, hypertension 1-3 degrees [7]. In recent years, there has been a gradual increase in interest in this method of treatment, which has a large empirical base of use, and a number of scientifically based works, confirming the effectiveness of this method of treatment. Thus, when reviewing the evidence bases of the effectiveness of hirudotherapy in cerebrovascular diseases, using sources from international databases Scopus, PubMed, Web of Science and the Russian base of scientific publications E-library, base of abstracts published in the Russian Federation, and the patent database of the Russian Federation, a small number of works were found on the use of hirudotherapy in the treatment of hypertension, hypertensive and atherosclerotic encephalopathy, prevention of primary and repeated ischemic stroke, post-stroke rehabilitation.

The therapeutic effects of hirudotherapy in clinical practice are explained by well-studied to date, the composition of medical saliva leeches. So, in addition to hirudin, the saliva of leeches contains inhibitors of trypsin and plasmin, inhibitors of alpha-chemotrypsin, chymazin, subtilisin and neutral proteases of granulocytes – elastase and cathepsin C, inhibitors of blood coagulation factor Xa and plasma kallikrein. In the saliva highly specific enzymes have also been found: hyaluronidase, destabilase, apyrase, collagenase, triglyceridase, cholesterol esterase, as well as a number of compounds of not yet studied nature, such as leech prostanoids, histamine-like substances and a number of others [8].

Inclusion of hirudotherapy in treatment regimens patients with arterial hypertension has antihypertensive, antiatherosclerotic action, improves heart function, affects rheological parameters of blood plasma, and most importantly, hirudotherapy is able to reduce the processes of ischemia, hypoxia and normalize microcirculation

[5, 18]. In review papers by foreign authors positive clinical results are described hirudotherapy in patients with arterial hypertension [22, 25].

Similar effects can be explained from a biological point of view. So, for food the leech itself needs increased blood flow, which achieved by the ingress of histamine-like substances and acetylcholine, which cause vasodilation and enhancing vascular permeability [10].

Of interest is an open controlled study conducted at the Russian State Medical University, which evaluated the effectiveness of the inclusion of a course of hirudotherapy (10 sessions) in 110 patients with chronic heart failure (CHF) II-III functional class (FC) with or without arterial hypertension. Patients primary groups (70 people) on the background of basic therapy, which was not changed in the course of treatment, hirudotherapy sessions took place. In patient groups with CHF III FC and normal arterial pressure and with CHF II – III FC and an increased level arterial pressure receiving hirudotherapy showed a statistically significant increase in the 6-minute walk distance. In patients in the control group (in subgroups with arterial hypertension and without it) significant changes did not have. After a course of hirudotherapy in patients with arterial hypertension, a significant decrease in diastolic pressure. There were no such changes in the control group [9].

A number of authors consider it expedient to use a course of treatment with medical leeches for the prevention of primary and recurrent stroke in patients with progressive cerebrospinal lesions on the background of hypertensive disease and accompanied by a hypercoagulable state [23, 24]. In 2010, a controlled study of the effectiveness of the course of hirudotherapy in the prevention of ischemic stroke in patients with transient ischemic attacks. The study included 120 patients, admitted to a neurological hospital with a diagnosis of transient ischemic attack, 58 of them against the background of basic therapy, which excluded antiplatelet agents and anticoagulants, three hirudotherapy procedures were performed. After a year of observation, it was noted from the presence of ischemic strokes and a significantly smaller number of repeated transient ischemic attacks in the group of patients who underwent hirudotherapy [23]. Ukrainian scientists conducted a controlled study of the feasibility of using hirudotherapy in the complex treatment of cardioembolic stroke in the acute period. In the main group in which complex treatment included hirudotherapy, on days 1-2 and 14-16 of the disease there was a significant decrease in the activity of coagulation in comparison with the control group, with this did not result in depletion of the physiological anticoagulant system and

inhibition of fibrinolysis. The authors stated a more effective recovery of neurological deficits and subjective improvement in the well-being of patients against the background of hirudotherapy [10].

The presence of lipase cholesterol esterase activity of the secret leech saliva predetermines its use for correction of the lipid spectrum of blood, directed for the prevention of cardiovascular and cerebral catastrophes.

Assessment of the effect of hirudotherapy on the lipid spectrum The patient's blood was carried out in a controlled study, the results of which were published in 2013 by researchers from the Peoples' Friendship University of Russia (Moscow) [6]. During In this work, 63 patients aged (69.3 ± 1.7) years were examined, of whom 57 had coronary heart disease, angina pectoris II FC, arterial hypertension, postinfarction cardiosclerosis, and 45 patients had diabetes mellitus.

The patients were divided into two groups: 35 patients the main group received as part of a complex treatment of cardiovascular pathology, hirudotherapy, and 26 patients of the control group received in as part of the complex treatment of statins.

By the 20th day of treatment, patients of the main group were carried out on average 6 sessions of hirudotherapy, and after the course of treatment the level of cholesterol decreased from (8.5 ± 0.87) to (4.6 ± 1.1) mmol / L, and triglycerides - from (6.2 ± 0.83) to (1.5 ± 0.1) mmol / l. In patients of the control group, the level of cholesterol decreased from (8.4 ± 0.79) to (4.53 ± 0.85) mmol / L, and triglyceride level - from (6.3 ± 0.75) to (1.3 ± 0.3) mmol / L.

In order to identify the optimal conservative methods of rehabilitation treatment for small-volume stroke, a controlled comparative study was carried out in 62 patients with acute violation of cerebral circulation, 30 of which during the rehabilitation period were carried out additional treatment with medical leeches. On the 3rd day of hirudotherapy, noticeable stabilization of blood pressure, improvement of neurological and general condition patients [10]. It should be noted that in most of the works devoted to the use of hirudotherapy, no significant side effects of this method were noted. The method was applied both in combination with the standard drug therapy, and with its partial cancellation. Adding hirudotherapy against the background of antiplatelet therapy did not lead to any hemorrhagic events.

Of course, large-scale randomized controlled studies of the application of the hirudotherapy method are of interest in the clinic. But the possibility of such research is still difficult to

implement in practice due to for a number of reasons: hirudotherapy is carried out most often in commercial centers, which leads to the impossibility holding a control group without including hirudotherapy; each doctor using hirudotherapy conducts it individually, based on on my own experience.

Thus, there is currently a scientifically grounded theoretical and practical the basis for the use of hirudotherapy in different groups of patients with an angioneurological profile (chronic cerebrovascular accident, acute period of ischemic stroke, post-stroke rehabilitation and other), which appears sufficient to use this complementary medicine method in complex treatment of cerebrovascular diseases.

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ANALYSIS OF ADVERSE EVENTS FOR ANTI –TUBERCULOSIS DRUGS IN
TUBERCULOSIS PATIENTS IN THE KHOREZM REGION

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✓ *Resume*

In Uzbekistan tuberculosis is one of the most threatening social and medical problem. Tuberculosis has become an epidemic in many countries of the world. Almost one and a half million people die annually from this insidious infection. Tuberculosis can be prevented and cured even with the most scarce resources. The article analyzes the case histories of patients who received in the treatment in the Khorezm regional anti- tuberculosis dispensary.

Key words: tuberculosis, the treatment, side effects, anti-tuberculosis drugs;

АНАЛИЗ НЕЖЕЛАТЕЛЬНЫХ ЯВЛЕНИЙ НА ПРОТИВОТУБЕРКУЛЕЗНЫЕ
ПРЕПАРАТЫ У БОЛЬНЫХ ТУБЕРКУЛЕЗОМ В ХОРЕЗМСКОЙ ОБЛАСТИ

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✓ *Резюме*

В Узбекистане туберкулез одна из наиболее угрожающих социальных и медицинских проблем. Туберкулез приобрел масштаб эпидемии в многих странах мира. Ежегодно почти полтора миллион человек умирают от этой коварной инфекции. В большинстве случаев туберкулез можно предупредить и предотвратить даже при самых скудных ресурсах. Несмотря на огромный опыт человечества и борьбе с туберкулезом. ежегодно в мире регистрируется 9 млн новых случаев заболевания туберкулезом и почти 2 млн умерших от него.

Ключевые слова: туберкулез, лечение, побочные эффекты, противотуберкулезные препараты.

ХОРАЗМ ВИЛОЯТИДА СИЛ КАСАЛЛИГИ БИЛАН ОҒРИГАН БЕМОРЛАРДА СИЛГА
ҚАРШИ ДОРИЛАРНИНГ НОЖЎЯ ҲОЛАТЛАРИ ТАҲЛИЛИ

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✓ *Резюме*

Ўзбекистонда сил касаллиги энг хавфли ижтимоий ва тиббий муаммолардан бири ҳисобланади. Ушбу инфекциядан ҳар йили жаҳонда деярли 1,5 миллион киши вафот этади. Бир миллион сил касаллиги ҳар йили аёлларда қайд этилиб, бу эса оналар орасида учрайдиган барча ўлим ҳолатларидан ҳам кўп демакдир. Силга қарши курашиш хизмати Ўзбекистонда бугунги кунда нуфузли давлатлар даражасига кутарилди, бу давлатимиз ушбу муаммога қаратилган тиббий профилактик сиёсати натижасидир.

Калит сўзлар: туберкулез, сил касаллигини даволаш, ножуя таъсир, силга қарши дори воситалари.

Relevance

Tuberculosis as an insidious disease has accompanied humanity for thousands of years. People have always looked for a cure for

tuberculosis. This disease claimed more lives than all wars combined. The main reason for the exacerbation of the epidemiological situation

with tuberculosis is the deterioration of the social living conditions of the population. In the Republic of Uzbekistan, a complex of large-scale anti-tuberculosis measures to combat tuberculosis is annually carried out.

Tuberculosis can be cured with medication. The discovery of the antibiotic streptomycin, which defeated tuberculosis rightfully belongs to Z.A. Waxman. It took many years of painstaking work of a large army of chemists, biochemists, pharmacists, microbiologists, clinicians, botanists to introduce anti-tuberculosis drugs. But at the present stage, humanity is worried about the increase in the number of patients with multidrug-resistant forms of tuberculosis (MDR). The Republic of Uzbekistan is one of the 20 priority countries of the WHO in terms of MDR-TB [1].

Treatment of drug-resistant tuberculosis is complicated from the point of view of constructing a DOTS treatment program: it is long-term, requiring patients to take chemotherapy for up to two years or more, while often enduring side effects of medications. In this case, adverse reactions caused by reserve drugs lead to a change in the treatment regimen and a decrease in the effectiveness of chemotherapy [1,2]. Therefore, studying the nature of adverse reactions caused by reserve drugs is a necessary prerequisite for effective treatment of patients with MDR-TB. The most important social risk factors in terms of avoiding treatment by tuberculosis patients are: alcohol abuse, loneliness of a homeless person, homeless, living alone and unmarried, lack of a permanent place of work, unemployed and unemployed. Also stay in the past in places of detention. Medical risk factors are the presence of bacterial excretion at registration of the patient and the fact of treatment in the phase of continuation of chemotherapy. Men and women interrupt treatment with the same frequency: 5.6 and 4.0%, respectively. Among men, treatment is interrupted more often by persons aged 31 to 50 years. Moreover, in patients with low efficiency of treatment, there is a combination of three factors or more [3,4]. Among patients with low adherence to treatment, late detection, widespread processes in the lung tissue, and abundant bacterial excretion are more often noted. multiple decay cavities, multiple drug resistance of the pathogen [3,10].

Thus, the most significant potential factors of low adherence to treatment in ineffectively treated patients with pulmonary tuberculosis are: demographic - socio-economic status. Social employment of the patient; personal -

understanding the disease and its consequences, the motivation of the patient and his family. Despite the efforts of phthisiatricians, there are a large number of patients who are negatively disposed towards therapeutic measures, most of whom undergo, but several repeated, often defective, courses of chemotherapy. It is in these patients that drug resistance of MBT is more often formed [5,6]. From a clinical standpoint, the main reasons for the spread of drug-resistant tuberculosis are late diagnosis, incorrect or incomplete treatment. Failure to adhere to basic principles contributes to the development of MBT resistance in combination chemotherapy. Of great importance was the "indiscipline" of patients - irregular intake of anti-tuberculosis drugs, premature discharge from the hospital, unauthorized care or discharge for violation of the regimen [9]. This situation, naturally, prevents the cure of these patients and promotes the development of drug resistance of mycobacterium to anti-tuberculosis drugs [7,8]. Due to the lack of the effect of chemotherapy, patients with drug-resistant pulmonary tuberculosis MBT for a long time remain bacteriological and can infect others with resistant pathogens, while the main reason for the increase in the number of patients with acquired (secondary) drug resistance is inadequate chemotherapy for newly diagnosed patients with tuberculosis ... The larger the number of such patients, the wider the reservoir of tuberculosis infection and the higher the risk of spreading it among healthy individuals and the emergence of new cases of pulmonary tuberculosis with primary drug resistance MBT [9,10]. So, in patients who took less than 50% of the planned doses during the main course of treatment. amplification occurred in 20.6% of cases. 60-70% of doses - at 12.5%. In more "regime" patients (more than 70% of doses), the expansion of the spectrum of drug resistance to drugs of the 1st and 2nd rows is reduced to 83%.

Patients with tuberculosis face many problems that affect their motivation for treatment. The most important factors that regulate the motivation of a person are value orientations: political, ideological, moral convictions of a person, deep and constant attachments. principles of behavior. The disease changes the perception of the present, the perspective for the future, contains the threat of loss of health and ability to work, changes in personal and social status, and the threat of death. As a result, there is a reassessment of personal values and motivation [2,1].

Purpose of the study: To study the

frequency, nature of adverse reactions caused by anti-tuberculosis drugs in patients who are in the regional anti-tuberculosis dispensary of the Khorezm region of Uzbekistan.

Material and methods

The study of the history of diseases of patients with pulmonary tuberculosis, an analysis of the medical records of an inpatient, TB 01, a register of adverse reactions of drugs, patients with primary MDR-TB who were treated at the Khorezm TB dispensary, the department of therapy for 12 months of 2020.

Result and discussion

In total, 93 medical histories of patients who were in the department were analyzed. Treatment of the regional tuberculosis dispensary in Urgench for 12 months of 2020 with primary MDR-TB. At the initial stage, in the first 2-3 weeks of treatment, at least one side effect was

observed in 76 (81.7%) cases, these PRs were temporary and disappeared on their own. 17 (18.3%) patients had no side effects. Visible adverse reactions to PVR were observed in 48 (51.6%) cases. In 34 (71%) patients, due to persistent adverse reactions, anti-TB drugs that caused AR were excluded from the treatment regimen.

Pas in all 48 (51.6%) cases, Eto / Pto in 6 (12.5%) cases. Latent side effects without clinical manifestations were reported in the form of eosinophilia 10 (20.8%) with eosinophil levels from 8% to 36%, as well as an increase in liver enzymes 5 (10.4%). The most common manifestations of PR were nausea, vomiting (80%), abdominal pain (14.6%), skin rash (16.6%), diarrhea (12.5%), neurological disorders (headaches, muscle cramps, insomnia) 12.5%. The average age of patients was 47 years (range 22-74), persons of working age accounted for 81.3%, most of them were men 28 (58.3%).

Table 1. Age of patients with tuberculosis observed

Up to 20 years	Up to 30 years	Up to 40 years	Up to 50 years	Up to 60 years	Over 60 years
4	13	12	5	7	7

Table 2. Analysis of patients by forms of tuberculosis, of which 33 are destructive forms

№	Forms	quantity
1		2
2	Cirrhotic pulmonary tuberculosis	10
3	Infiltrative pulmonary tuberculosis	26
4	Infiltrative pulmonary tuberculosis with disintegration	3
5	Fibrous-cavernous pulmonary tuberculosis	2
6	Chronic disseminated tuberculosis	2
7	Disseminated tuberculosis in the phase of infiltration and decay	1
8	Cavernous tuberculosis	3

Table 3. Tuberculosis with concomitant pathology, of 48 patients had 32 (65%)

№	Comorbidity	КОЛИЧЕСТВО
1	Addiction	1
2	Alcoholism	12
3	HIV infection	3
4	Diabetes	11
5	Hormone-dependent rheumatoid arthritis	1
6	Hormone dependent, bronchial asthma	2
7	Silicosis, occupational diseases	1
8	Stomach ulcer and 12 duodenal ulcer	1

Table 4. Manifestations of side effects after taking drugs

Adverse reactions from the gastrointestinal tract 44 cases, after taking drugs				
Nausea	vomiting	heartburn	Stomach ache	Loose stools
26	2	8	2	6
Adverse reactions from the liver -6 cases				
Increased thymol test	Increased ALT	pain	jaundice	Increased bilirubin
1	1	3	1	2
Side effects from the central nervous system-23 cases				
headaches		Sleep disturbance		depression
8		8		5
Skin reactions		Itchy skin in 8 patients		

Table 5. Side effects of anti-TB drugs in patients

Side effects	number	Percent
Nausea, vomiting	20	80%
Headache	10	40%
	4	16%
Hearing and vision impairment	7	28%
Diarrhea	7	2%
Joint pain	6	24%
Medicinal hepatitis	4	16%
dermatitis	2	8%
Peripheral neuropathy	2	8%

Table 6. Discovery of anti-tuberculosis drugs with publication in the literature

№	Preparation	Author, year, publication	
1	PASK	Berncheim	1941
2	Streptomycin	Waksman	1944
3	Pyrazinamide	Makcaness, Smith	1950
4	Isoniazid	Fox et al	1952
5	Cycloserine	Hernd, Kropp	1955
6	Kanamycin	Umezawa	1957
7	Ethionamide	Noufland-Guy-Loe	1960
8	Capreomycin	Herr et.al Loe	1961
9	Ethambutol	Thomas, Wilkinson	1966
10	Rifampicin	Maggi et al	1966
11	Fluoroquinolones	Gillepsei, Kennedy	1990

Most often, side effects of anti-TB drugs were on the gastrointestinal tract [2] (nausea, vomiting, diarrhea, drug hepatitis) - 30 (90.9%) cases, neurological disorders (headaches, peripheral neuropathies) - 12 (36.4 %) cases, atalgia 7 cases (21.2%), allergic reactions in the form of dermatitis and hearing loss in 4 cases (12.1%).

Conclusions

Thus, interruption of the main course of chemotherapy and non-compliance with the

treatment regimen by patients lead to the formation of resistance of MBT to anti-tuberculosis drugs.

Side effects of anti-tuberculosis drugs limit the possibility of full chemotherapy. PD developed in all patients with concomitant gastrointestinal pathology, cachexia, and a widespread destructive tuberculosis process. The most typical manifestations of PR are nausea, vomiting, diarrhea - 39 (81.2%) cases, neurological disorders (headaches, depression,

insomnia) - 6(12.5%). Adverse reactions were mainly caused by Pas, Pto / Eto, Cs, Z. In 70% of cases, it became necessary to exclude one drug from the treatment regimen.

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TOXIC LIVER DAMAGE IN ACUTE POISONING AND ENDOGENOUS INTOXICATION
(Literature review)

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✓ **Resume**

The authors carried out a literature review of the data on toxic liver damage in acute poisoning, due to the interaction of biochemical structures ("toxicity receptors") of the human body with toxic substances of various origins. Drug poisoning by a number of researchers in different countries (USA, Uzbekistan) leading to deaths, the authors review the data, find out the reason for how the liver changes, which subsequently leads to endogenous intoxication

Key words: liver, drugs, poisoning, intoxication

**ТОКСИЧЕСКИЕ ПОРАЖЕНИЯ ПЕЧЕНИ ПРИ ОСТРЫХ ОТРАВЛЕНИЯХ И
ЭНДОГЕННОЙ ИНТОКСИКАЦИИ**
(обзор литературы)

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✓ **Резюме**

Авторами проведено литературный обзор данных токсические поражения печени при острых отравлениях, вследствие взаимодействия биохимических структур («рецепторов токсичности») организма человека с токсическими веществами различного происхождения. Отравления лекарственными средствами ряда исследователей в разных странах (США, Узбекистан) приводящие в летальные исходы, авторами проводится обзор данных, выясняется причина, как изменяется печень, которая в последующем приводит к эндогенной интоксикации

Ключевые слова: печень, лекарственные средства, отравление, интоксикация

**O'TKIR ZAHARLANISH VA ENDOGEN INTOKSIKATSIYA PAYTIDA JIGARNING
TOKSIK SHIKASTLANISHI**
(Adabiyot sharhi)

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✓ **Resume**

Mualliflar inson tanasining biokimyoviy tuzilmalari ("toksiklik retseptorlari") ning turli xil kelib chiqadigan toksik moddalar bilan o'zaro ta'siri tufayli jigarni zaharlanishida toksik shikastlanishlari to'g'risidagi ma'lumotlarning adabiy sharhini o'tkazdilar. Turli mamlakatlarda (AQSh, O'zbekiston) o'limga olib keladigan bir qator tadqiqotchilar tomonidan giyohvand moddalardan zaharlanish, mualliflar ma'lumotlarni ko'rib chiqadilar, jigarning qanday o'zgarishini, keyinchalik endogen intoksikatsiyaga olib kelishini aniqlaydilar.

Kalit so'zlar: jigar, dorilar, zaharlanish, intoksikatsiya

In the modern view, acute poisoning is a pathological condition resulting from a violation of chemical equilibrium, due to the interaction of biochemical structures ("toxicity receptors") of the human body with toxic substances of various origins [3, 13, 31]. Toxic hepatitis is one of the most common types of pathology caused by the action of various chemicals, including drugs, pesticides, alcohol, etc., as well as various endotoxins, including protein breakdown components in burn toxemia, peritonitis, and pancreatic necrosis [1, 32]. Medicines are usually represented by substances with powerful biological activity and therapeutic efficacy, but most of them have a potential hazard and often have serious consequences leading to disability or death [4, 12].

According to a number of researchers, only 13-15% of new drugs entering the market meet modern requirements of pharmacodynamics and pharmacokinetics, safety, while often the toxic property of a drug is detected only after it enters the pharmacy network.

In the USA, according to the US Food and Drug Administration products and drugs (FDA), complications caused by the use of drugs account for up to 25% of all causes leading to an increase in the mortality rate of the population, being in fourth place after cardiovascular, oncological and acute cerebrovascular accidents [8, 12]. According to the latest statistics, in the United States, the negative impact of drugs, annually leads to the death of about 120-125 thousand people [8].

We are well aware of and often used in the process of self-treatment of fever and pain syndrome, the so-called "harmless" drug paracetamol, but it is he who is the leader in the United States and the European Union in the number of cases of overdose and poisoning, leading to severe liver damage and even death.

As for Uzbekistan, due to the lack of reliable statistical information related to the identification of side effects of drugs and their overdose, we can only assume that the real situation with drug intoxication of the population is no less complicated than in developed countries [8].

In recent years, the hepatotoxicity of the sharply increased amount of drugs used in medical practice has become one of the main problems of clinical toxicology [4, 8].

Currently, experts in pharmacological safety have identified about 1200 drugs with toxic effects on the liver and leading to the process of their application to damage to parenchymal cells with the development of drug-induced hepatitis of varying severity [11, 17].

Toxic hepatitis caused by the use of drugs in medical activities causes 5 to 12% of all hospitalizations for hyperbilirubinemia, that is, jaundice and up to 15-17% of cases of acute liver failure. In this regard, the artificial formation of drug-induced hepatitis has become a mandatory part of all preclinical trials of hepatoprotectors [11, 12].

Most of the drugs taken orally into the body are lipophilic, non-polar substances, and therefore the transfer of their molecules through the bilipid layer of the cell membrane of the intestinal epithelium occurs by passive transport along the concentration gradient, or if they are hydrophilic polar substances, then their absorption occurs with the help of such transport proteins as albumin [8, 11, 12].

In the liver, further elimination of medicinal substances is carried out by their transformation from non-polar hydrophobic compounds into polar hydrophilic ones, as well as other stages of biotransformation of foreign compounds. This process occurs with the participation of enzymes of hepatocytes (monooxygenase), which are located in microsomes and the Golgi complex, while the main active component of oxidation processes are the multienzyme complex hemoprotein cytochrome P450 and the coenzyme nicotinamide-adenine-dinucleotide-phosphate (NADPH) [8, 9, 21, 32].

Clinical toxicologists and other researchers of the toxicity of medications have found that if you take paracetamol in a dose of no more than 4 grams, then complications in the form of toxic liver damage are unlikely. However, long-term, that is, more than three days, the use of paracetamol in doses exceeding 5 grams per day, as well as a single dose of more than 15 grams of the drug, cause a high risk of developing liver dysfunction due to its organic damage. The main danger is the formation of toxic metabolites such as N-acetyl-benzoquinone-imine (NAPQI) as a result of oxidation on cytochrome P450 by the mechanism of lethal synthesis [23, 25, 28, 30].

At the same time, an overdose of paracetamol leads to a decrease in the reserves of glutathione, which is the main blocker of its destructive effect on the liver, as a result, toxic metabolites bind to the proteins of the cell membranes of hepatocytes, which leads to massive necrosis of the hepatic parenchyma. At the same time, researchers especially noted a sharp increase in the hepatotoxic effect of paracetamol when combined with ethyl alcohol [3, 19, 20, 21, 23].

The main reason for the development of toxic hepatitis remains the abuse of alcohol and its

surrogates. Toxic alcoholic hepatitis, which is based on dystrophic and necrotic changes in the liver parenchyma, is accompanied by a violation of all its vital functions. Liver damage is manifested by a decrease in synthetic, detoxification and regulatory (influence on interstitial and other types of metabolism) functions [1, 4, 13, 18, 27]. Most often, acute alcoholic hepatopathy occurs in the form of cytolytic syndrome, which is understood as a violation of the permeability of the cellular and intracellular membranes of hepatocytes. The clinical manifestations of this syndrome are a sudden increase and soreness of the liver, icterus of the sclera and skin, phenomena of general intoxication, fever, and in advanced cases - hepatic encephalopathy. The products of destruction of the liver parenchyma are directly involved in the formation of endogenous intoxication, which, in turn, leads to an increase in degenerative-dystrophic changes in the liver and other parenchymal organs, contributing to the development of complications, including infectious [9].

Also, the liver is one of the main target organs in the name of endogenous intoxication (EI), which develops in various diseases as a result of the accumulation of various toxicants of endogenous origin in the body with insufficient function of the natural biological detoxification system [9].

The first data on the development of endotoxiosis in acute poisoning with cauterizing agents, neurotropic poisons (barbiturates, alcohol, carbon monoxide, organophosphorus compounds) were published by E.A. Luzhnikov. et al. in 1989. The authors proved that already from the toxicogenic stage of acute poisoning, there is an increased level of CM in the blood and an increase in hematological indices of intoxication (leukocyte index of intoxication, neutrophil shift index), as well as a decrease in the binding capacity of albumin, the shifts of which deviated from the norm by 1.4-3, 4 times [13, 14, 15].

Despite the significant molecular, biochemical and clinical difference in endotoxiosis, one of the main target organs for toxins is the liver with the formation of toxic hepatitis (TG), the severity of which directly depends on the concentration and duration of exposure to EI factors [7].

A separate group of victims with changes in liver function is represented by patients with extensive and deep burns. The phenomena of hepatitis are observed in all periods of burn disease [9, 24, 29]. Violation of vascular permeability, which is noted immediately after a burn injury, reaches its peak after 6-8 hours, when a decrease in the volume of circulating blood becomes obvious. As a result, there is a transition of intravascular

fluid into the interstitial space of intact tissues. In the burned tissues, the osmotic pressure rises, which serves to increase the flow of fluid into this zone and to increase the edema, which is caused by an increase in sodium ions in them. The osmolarity of the intestinal fluid increases even more due to the subsequent release of proteins from the vascular bed into it, mainly albumins, which have the ability to retain water 17 times greater than the mass of the protein itself. The development of edema in unburned tissues, which is especially pronounced in burns of over 30% of the body surface, largely depends on the loss of protein circulating in the vascular bed. In severe burns, due to a violation of the permeability of cell membranes, sodium ions from the extracellular space penetrate into the cells and carry water with them, which threatens the development of intracellular edema [3, 19, 32].

The developing hypovolemia becomes the cause of hemodynamic disorders, expressed in a drop in cardiac output, an increase in total peripheral vascular resistance, a decrease in central venous pressure, pulmonary artery pressure and general systemic pressure, causing a further decrease in regional blood flow in the kidneys, liver and pancreas. At the same time, increasing hemoconcentration with hypercoagulation, impaired blood rheology (deterioration of erythrocyte deformability, increased viscosity) lead to further microcirculatory tissue changes, which are manifested by secondary necrosis in the heat-affected zone, the appearance of acute erosions and ulcers in the gastrointestinal tract, early pneumonia, the development of hepatic renal and cardiopulmonary failure [32].

According to the toxicological and combustiological centers of the CIS, the European Union, and the United States, liver damage occurs in 25-47% of patients admitted with acute chemical poisoning, from 60 to 95% of all cases of toxic hepatitis occurs as a result of severe endogenous intoxication [9, 22, 32].

Hepatotropic poisons, their metabolites and endogenous toxins cause various chemical reactions in the cell - depletion of reduced glutathione or oxidative stress, followed by an effect on proteins, lipids and DNA. This leads to apoptotic cell death and an increase in the effect of cytokines on the liver immune system, since the process involves cell organelles - mitochondria, cytoskeleton, endoplasmic reticulum, microtubules and nucleus [25]. According to a number of authors, an indirect effect of xenobiotics on cell organelles is possible through the activation or inhibition of signal kinases, transcription factors, and the expression of profile genes. The outcome

may be the start of a necrotic or apoptotic process, or an increase in the effect of cytokines on the immune system [3].

The liver is a barrier to virtually all foreign substances entering the human body. Entering the body in various ways, hepatotoxic agents disrupt the structure and function of the cell membranes of hepatocytes, enhance the processes of lipid peroxidation, change the processes of regeneration and function of hepatocytes, which is accompanied, directly and indirectly, by impaired immune reactivity [3].

Toxic liver damage can manifest itself in acute and chronic forms. Acute liver damage is characterized by necrosis and fatty degeneration of liver cells, hemodynamic disorders, edema and protein degeneration of cells. It develops 2-3 days after exposure to a damaging agent and is accompanied by an increase in body temperature, weakness, loss of appetite, pain in the right hypochondrium, intense coloration of urine, yellowness of the sclera and skin [3, 32]. Development of hemorrhagic and hepatorenal syndromes is possible. In contrast to acute toxic hepatitis, the clinical picture of chronic toxic liver lesions is not expressed, characterized by a relatively benign course without a tendency to progression. There are practically no clear signs of liver failure and outcomes in liver cirrhosis. Chronic toxic hepatitis (CTG) in terms of clinical and morphological signs and course is closest to the so-called nonspecific reactive hepatitis. Despite the duration of the process, no lethal outcomes occurring directly as a result of liver damage are observed. HTG has a long course with periodic exacerbations, usually due to overwork or an error in the diet. For CTG of professional genesis, a gradual development of the disease is characteristic, starting with dyspeptic complaints, the addition of biliary syndrome, moderate enlargement of the liver and impairment of its functional state. Examination of the patient for markers of viral hepatitis B, C and D allows to exclude the viral etiology of the disease. Ultrasound examination of the liver and biliary tract is of great diagnostic value. In difficult cases of diagnosis, it is recommended to use computed tomography (CT) to determine the density of the liver [3, 32]. CT scans the liver in sequential horizontal sections. Diagnostics of TG includes the establishment of hepatitis based on the level of bilirubin and its fractions, albumin in the blood and prothrombin index (decrease), activity of transaminases, alkaline phosphatase and gammaglutamyl transpeptidase and exclusion of viral etiology of the disease. It is necessary to take

into account other symptoms of intoxication, changes in the blood, nervous system [3, 32].

Genetic studies [7, 12], which were widely carried out in persons who were in contact with radiation, beryllium, microwave ovens and suffered from occupational allergic dermatoses, are an urgent direction in the study of toxic hepatitis. The data of such studies, in combination with clinical and functional characteristics, help to identify a predisposition to the disease and identify individuals with an individual predisposition to certain occupational hazards.

As you know, the processes of biotransformation of xenobiotics proceed with the participation of cytochrome P450 in the liver, are associated with the formation of aggressive intermediate products and the initiation of free radical processes, while liver damage and the development of toxic hepatitis develop. One of the members of the cytochrome P450 family is CYP2E1. The CYP2E1 gene is mapped on chromosome 10 in the 10q24.3 region and is expressed mainly in the liver [27, 30, 32].

Thus, genetic research is a topical direction in the study of toxic hepatitis. In Uzbekistan, the study of predisposition to chronic (industrial) toxic hepatitis was widely carried out in 2006-2009. According to T.O. Daminov, the features of the distribution of HLA-antigens in patients with chronic viral hepatitis in the Uzbek population, and in patients with CTG of professional genesis were studied. HLA-typing was carried out in the tissue typing laboratory of the Institute of Immunology of the Academy of Sciences of the Republic of Uzbekistan using a standard two-stage microlymphocytotoxic test. The results of the study showed that antigens were most often detected in patients with CTG: A2, A25, B16, B8, B22. All these antigens were statistically significant. The presence of these antigens in the HLA phenotype of individuals increases the risk of developing TG in their owners. HLA haplotypes have also been studied. Significance was established for haplotypes A2 / B8, A2 / B15, A 25 / B22, the inheritance of which increases the risk of developing TG. The data obtained indicate the presence of HLA-associated genetic control in the transmission of susceptibility to CTG in the Uzbek population [3].

These studies suggest their effectiveness in the study of hereditary predisposition to acute toxic hepatitis due to exposure to exotoxins and toxic liver damage during endogenous intoxication, but such studies have not yet been carried out [30].

In recent years, a lot of works on toxic liver damage have been published, however, there is still no unified view of the pathogenesis of the

development of toxic hepatitis, there are no clear diagnostic criteria to differentiate it from infectious at an early stage, the role of hypoxia and oxidative stress in the development of liver damage in severe poisoning, morphological differences in changes in the structure of the liver in acute chemical poisoning of various etiologies and in endogenous intoxication have not been studied [18, 32].

Also, the relationship between toxic liver damage in acute chemical poisoning and the immune status of the body has been insufficiently studied. The absence of clear diagnostic criteria for TG in acute chemical poisoning at an early stage leads to its late diagnosis, in fact, already at the stage of development of liver failure and, accordingly, late and inadequate drug correction. Accordingly, we believe that the inclusion of antioxidant, antihypoxant, membrane-protective and immunomodulatory properties into the complex of therapeutic measures will be of great importance in the prevention and intensive therapy of toxic liver damage [16, 32]. The use of hepatoprotectors can reduce the damaging effect of lipid peroxidation products and improve the reparative processes in the liver, and the use of immunomodulators affects the immune system, correcting developing disorders, and improving the reparative processes in hepatocytes [16].

However, an algorithm for their use in toxic hepatitis at an early stage of acute poisoning has not yet been developed.

Analysis of the literature and the work of the toxicological and burn departments of the Republic of Uzbekistan showed the absence of a single, differentiated by the severity of poisoning approach to the tactics of TG intensive therapy. In addition, in our country, at the level of sub-branches of the RSCEMP, patients with acute poisoning are admitted not to specialized toxicological, but to intensive care units. This situation leads to the dependence of the quality of care provided on the qualifications and experience of the doctor. In this regard, there is an urgent need to create a unified algorithm for therapeutic measures based on a clear and generally accepted methodology for assessing the severity of the condition in toxic hepatitis.

Extensive thermal trauma is accompanied by the development of a nonspecific systemic inflammatory response syndrome - CVS, which underlies the complications of burn disease and high mortality. The developing uncontrolled CVS becomes the cause of tissue damage, immunodeficiency with the development of purulent-septic complications, followed by multiple organ failure. Studies show that toxic hepatitis in severely burned patients who are

hospitalized in the RSCEMP develops in 82.9% of cases [9].

Thus, the above unresolved issues in the diagnosis and tactics of intensive therapy of toxic hepatitis in exo- and endotoxycosis require further research.

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SURGICAL TACTICS IN COMBINATION OF ACUTE CALCULOUS CHOLECYSTITIS WITH LIVER CIRRHOSIS

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Bukhara Branch of the Republican scientific center of emergency medical care

✓ **Resume**

This article discusses the treatment and treatment of acute cholecystitis in combination with diffuse liver disease, which today is one of the problems of medicine due to its prevalence, complications and the complexity of timely diagnosis. All patients were divided into two groups. Analysis of the results of laparoscopic treatment of 33 patients with acute cholecystitis and chronic diffuse liver disease in group 1 and 30 patients with traditional cholecystectomy with the same diagnosis in groups 2 and 4, treated conservatively, a total of 67 patients before and after surgery were covered.

Key words: *cholelithiasis, liver cirrhosis, cholecystectomy, portal hypertension.*

ХИРУРГИЧЕСКАЯ ТАКТИКА ПРИ СОЧЕТАНИИ ОСТРОГО КАЛЬКУЛЕЗНОГО ХОЛЕЦИСТИТА С ЦИРРОЗОМ ПЕЧЕНИ

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✓ **Резюме**

В данной статье рассматривается лечение и лечение острого холецистита в сочетании с диффузным заболеванием печени, которое сегодня является одной из проблем медицины из-за своей распространенности, осложнений и сложности своевременной диагностики. Все пациенты были разделены на две группы. Анализ результатов лапароскопического лечения 33 пациентов с острым холециститом и хроническим диффузным заболеванием печени в 1-й группе и 30 пациентов с традиционной холецистэктомией с одинаковым диагнозом во 2-й и 4-й группах, леченных консервативно, всего 67 пациентов до и после операции освещены.

Ключевые слова: *желчекаменная болезнь, цирроз печени, холецистэктомия, портальная гипертензия.*

JIGARNING DIFFUZ SURUNKALI KASALLIKLARI O'TKIR KALCULYOS XOLETSISTIT BILAN KELGAN HOLATLARD A TASHHISLASH VA DAVOLASH TAKTIKASI

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✓ **Rezyume**

Xususan makolada hozirgi kecha kunduzda uzining urash darazhasi, asoratlari va uz vaktida tashxislashning murakkabligi bilan tibbiyotning muammolaridan biri bulib kelayotgan jigarning diff casalliklari bilan utkir cholecystitlinggan chushilibirla Barcha bemorlar ikki guruhga bulingan. 1-guruxga utkir xoletsistit va zigarning surunkali diff casalligi bilan kelgan 33 bemorning laparoskopik davo natijalari va 2- guruhga esa ushbu tashxis bilan an'anaviy xoletsistektomiya kilingan 30 bemor bilan konservativ davo muolajalari gashiqi chan yoritilgan.

Kalit so'zlar: *xolelitiyoz, jigar sirrozi, xoletsistektomiya, portal gipertenziya.*

Relevance

To date, the issues of surgical tactics in relation to the volume and timeliness of surgical intervention in patients with cirrhosis of the liver (LC) with concomitant pathology remain poorly understood, and having single publications on this problem are debatable (Malakhanov V.A., Seliverstov P.V., et al. 2016., Khazanov A.I, 1997; Eramishantsev A.K, et al, 1992).

Acute cholecystitis (AC) is currently one of the most common diseases in emergency abdominal surgery. Significant difficulties for the diagnosis and treatment of AC are present when it is combined with a number of concomitant diseases, and primarily with cirrhosis of the liver (LC) (Nazirov F.G et al., 2019, Gadiev S.I. 2017, Fokin D.V., p. et al., 2012). Until now, there are very few scientific articles devoted to this problem, and the individual experience of the authors in the treatment of patients with a combination of AC and CP is counted in units (Shevchenko R.S. 2012). At the same time, tactical and technical approaches to the choice of the volume and methods of treatment of AC, depending on the functional state of the liver, present particular difficulties.

A feature of cholecystectomy in patients with LC is that when manipulated in the gallbladder neck and hepatoduodenal ligament, their damage is fraught with the development of profuse bleeding from the branches of the venous plexus, which underwent transformation during portal hypertension.

Materials and methods

Another important problem is the significant difficulties and difficulties in isolating the gallbladder from the bed and its subsequent processing (hemostasis and suturing), which was due to pronounced pathomorphological changes in the biochemical properties of liver tissue (stiffness and perforation) and bleeding of damaged liver tissue, especially regenerate nodes. An improperly or insufficiently treated gallbladder bed can often cause these complications. The resulting hemorrhagic complications, as a rule, are difficult to correct due to the purely technical difficulties of local hemostasis, as well as blood clotting disorders, which is characteristic of these patients and requires the use of additional methods of hemo- and bile stasis.

According to several studies, mortality during urgent operations on the abdominal organs in patients with liver cirrhosis can reach 45% (Rafael S et.al 2017). New technical developments that allow the transfer of color images of the abdominal organs from the laparoscope to the monitor screen have led to the beginning of the era of laparoscopic

surgery. This was also facilitated by the undoubted advantages of laparoscopic cholecystectomy (LCE) - low trauma, minor pain syndrome, cosmetology and quick recovery of working capacity. Despite the significant experience in performing LCE in patients with complicated cholelithiasis, cirrhosis of the liver remains one of the main factors that have a negative impact on the intra- and postoperative period (Devyatov A.V. 2018, Kurbonov K.M. et al., 2019). Performing LCE became possible in 90–95% of patients with cholelithiasis requiring surgical treatment (Küper M.A. et al., 2014).

The lack of clear recommendations for the management of such patients and the few attempts to predict risks and analyze the causes of unsatisfactory results make this problem widely disputable and determine the relevance of the study.

Initially, CP with portal hypertension was considered a contraindication to LCE due to the potential risks of bleeding (Nazirov F.G. 2017). With the accumulation of experience in laparoscopic surgery, this minimally invasive approach began to be used in a number of complex situations associated with the gallbladder, including cholelithiasis in patients with LC. At the same time, publications in recent years (Machado N.O. 2018) reported a fairly wide range of rates of postoperative complications (6.6–47.3%) and mortality (0–4.3%) with LCE in patients with LC.

An increase in the surgical field during laparoscopy allows for careful treatment during hemostasis, and pneumoperitoneum appears to play a role in determining hemostasis (baroechostasis). In addition, LCE reduces the risk of infections, incisional hernias and infiltration of ascites through the abdominal wound. The lack of clear recommendations for the management of such patients and the few attempts to predict risks and analyze the causes of unsatisfactory results make this problem widely debatable and determine the relevance of the study.

Thus, summing up the results of the study of scientific literary sources devoted to the diagnosis and surgical treatment of AC in patients with LC, we can conclude that at present there is a clear trend towards an increase in the number of such patients in the structure of gastroenterological morbidity in the population of many countries, including Uzbekistan. Which requires the search and development of new recommendations in the complex of perioperative therapeutic measures and differentiated surgical treatment tactics. The effectiveness of modern instrumental research methods in the diagnosis of AC will be assessed

and criteria for assessing the operational risk, frequency and nature of complications of AC in AC, in patients with cirrhotic liver transformation, will be determined. It will be substantiated that urgent surgical interventions for acute cholecystitis in patients with liver cirrhosis are associated with an increased risk of intra- and postoperative complications and mortality. It will be shown that elective cholecystectomy in this group of patients should be avoided, and emergency operations should be performed for emergency indications in the absence of the effect of conservative therapy in progressive cholecystitis.

The advantages of LCE will be determined, which can be successfully performed with careful selection of patients with compensated cirrhosis, evaluating less blood loss, duration of surgery, and length of hospital stay.

It will be developed and presented for the first time. Improved differentiated surgical tactics of LCE, with cirrhosis according to Child-Pugh A, B and C of certain groups of patients, effective methods of pre- and postoperative treatment of patients with AC and liver cirrhosis.

It will be proved that patients with liver cirrhosis at the Child B and Child C stages should receive treatment and are subject to a more in-depth examination and determination of all the risks of the operation, which will significantly reduce intra- and postoperative complications, and improve the results of LCE.

The implementation of the developed algorithm for the diagnosis of AC in patients with LC with a differentiated therapeutic approach, taking into account the severity of clinical symptoms, as well as the data of laboratory and instrumental research methods, will reduce the time of diagnosis and surgical intervention, as well as improve the treatment results for this category of patients.

Comparing the magnitude of the correlation of many prognosis factors with the outcomes of operations on the biliary tract in patients with liver cirrhosis, a number of researchers have come to the conclusion that the prognosis is significantly reliable based on Child's gradations (Urokov Sh.T., Abidov U.U., 2020; Fomin A.M., Lobakov A. I. et al. 2015; Borodach V.A., Borodach A.V., 2005; Khadzhibaev M.Kh, 2003).

Sh. Sherlock (2002) notes that with cirrhosis of the liver, any operations for the underlying or concomitant disease are accompanied by a high risk of complications and death. According to the author's data, the operational lethality in liver cirrhosis is 30%. In child groups A, B and C, the operational mortality is 10, 31 and 76%, respectively. However, most patients are admitted to a surgical hospital due to a complicated course

of the most common urgent abdominal diseases, often unaware of concomitant diffuse liver damage, which is mostly an intraoperative finding (Urokov Sh.T, Eshonov O.Sh, 2019; Nazyrov F. G. et al, 1994; Sherlock Sh, 2002). Thus, to date, a number of questions on the problems of pathogenesis, diagnosis and treatment of cholelithiasis (cholelithiasis) in patients with diffuse inflammatory liver diseases have no answer, and judgments on some problems are very controversial and require additional study.

In this subchapter, we present a retrospective analysis of the results of examination and treatment of 67 patients who were from 2014-2020 in the Bukhara branch of the RSCMP of the Ministry of Health of the Republic of Uzbekistan for acute calculous cholecystitis (ACC) with concomitant cirrhosis of the liver (LC). Of these, 63 (94%) patients underwent surgical treatment and 4 (6%) patients were discharged after relief of an acute attack due to the severity of the condition caused by LC with portal hypertension (PH) (2 patients) and refusal of surgical intervention in 2 patients. It should be noted that of the last 4 patients, 2 had choledocholithiasis, which was resolved with endoscopic papillosphincterotomy (EPST).

To develop effective and rational surgical tactics, we conducted a retrospective analysis of the results of surgical treatment of patients with ACC with LC. Depending on the tactics used and the type of surgical intervention, the patients were divided into the following groups: Group I - patients who underwent laparoscopic cholecystectomy (LCEC) (33 patients), II - traditional cholecystectomy (TCEC) (30 patients).

In group I, all patients were operated on urgently, while CP without PH was diagnosed in 14 patients, CP with LP in the compensation stage - in 10, subcompensation - in 6, and decompensation - in 3. Varicose veins of the esophagus (varicose veins) and stomach found in 13 patients: I degree - in 7, II degree - in 5 and III degree - in 1 patient. The functional state of the liver in this group of patients upon admission was assessed as follows: class "A" - in 21 patients and class "B" - in 12 patients. On admission, 9 patients were diagnosed with jaundice syndrome. In the last 7 patients, endoscopic retrograde cholangiopancreatography (ERPHG) was performed, in which 5 patients had common bile duct stones and 2 patients had no choledocholithiasis. jaundice was of a parenchymal nature. Patients with choledocholithiasis were operated on after endoscopic debridement of the common bile duct (ESC) and relief of jaundice. With activation of the cirrhotic process in the liver,

2 patients were operated on after a course of conservative therapy and normalization of blood biochemical parameters. After preoperative preparation in this group of patients in 4 patients with functional class "B" there was an improvement in the functional parameters of the liver and general condition, and repeated laboratory monitoring made it possible to transfer these patients to the group of class "A".

During the operation, only 2 patients had profuse bleeding from the gallbladder bed, which was stopped by the coagulation method. In the postoperative period, 1 patient after EPST, stone evacuation and subsequent LHEC showed activation of the cirrhotic process, which was arrested and the patient was discharged in a relatively satisfactory condition. It should be noted that this patient was operated on with a class B functional status. In order to prevent esophageal bleeding, 2 patients with esophageal varices in the postoperative period underwent endoscopic sclerotherapy (ECT) sessions of varicose veins. The sclerotherapy was completed successfully and the patient was discharged.

All patients with CP and ACC, operated on by the laparoscopic method, were discharged in satisfactory

condition. The next group II consisted of 30 patients with ACC with LC who underwent traditional cholecystectomy. 13 patients were urgently operated and 17 patients were urgently operated. CP without PH was diagnosed in 11 patients of this group, LP in the compensation stage in 15 patients, subcompensation in 13 patients, and decompensation stage in 2 patients. Functional class "A" was diagnosed in 16 patients, class "B" - in 12 and class "C" - in 2 patients. In 8 patients, esophageal varices were diagnosed: I degree - in 5 patients, II - in 2 and III degrees - in 1 patient.

On admission, 3 patients showed signs of choledocholithiasis, which was confirmed by ERPCG, endoscopic papillosphincterotomy (EPST) was performed with the evacuation of calculus into the intestine. Subsequently, after relief of the attack and improvement of biochemical parameters, the patient underwent ECT and after another 4 days cholecystectomy. The postoperative period was uneventful and the patient was discharged in satisfactory condition.

The frequency of various complications and mortality in this group of patients are shown in Table 1.

Table 1.

Complications and mortality after TCEC in patients with ACC and LC (n = 30)

Complications	Functional class			Total (%) n = 30
	«A» n = 16	«B» n = 12	«C» n = 2	
Liver failure	2 (12,5%)	4 (33%)	2 (100%)	8 (27%)
Bleeding from ERVP	-	1 (8%)	-	1 (3%)
Suppuration of the wound	1(6%)	1 (8%)	-	2 (7%)
Ascites-peritonitis	-	1 (8%)	-	1 (3%)
Mortality	-	2 (17)%	1 (50%)	3 (10%)

As the analysis has shown, with the deterioration of the functional status of the liver, the number of complications and mortality increase. The most severe complications such as liver failure and bleeding from esophageal varices were more often observed in patients with functional class "B" and "C". Thus, activation of the cirrhotic process with the development of liver failure was observed in 12.5% of operated patients with functional class "A", in 33% with class "B" and in 100% of patients with class

"C". In the postoperative period, 3 patients with functional class "B" and "C" died from the developed complications. Mortality after TCEC was 10%.

The data obtained allow us to assume with some confidence that effective decompression of the biliary tract, even in the absence of choledocholithiasis in patients with LC, prevents the progression of liver failure and improves the immediate results of surgical treatment of patients with ACC and LC.

Table 2.

Complications and mortality after LCEC and TCEC.

View Operations	Functional class						Total (%)	
	«A»		«B»		«C»			
	Comp.	Mort.	Comp.	Mort.	Comp.	Mort.	Comp.	Mort.
LHEC (I group)	-	-	1	-	-	-	1 (3%)	-
	n=21		n =12				n=33	
n = 30	2	-	4	2	2	1	8 (27%)	3 (10%)
	n=16		n=12		n=2		n=30	

Note: Comp. - complications. Mort. - mortality

Conclusions

Thus, the analysis of the results of various surgical procedures in patients with LC and ACC without choledocholithiasis or after endoscopic debridement of the common bile duct allows us to recommend the following treatment tactics for this group of patients:

Acute inflammatory process in the gallbladder worsens the functional state of the liver; causes a decrease in metabolic functions and an increase in the activity of the pathological process in the liver.

In patients with LC with simple forms of ACC without choledocholithiasis or after endoscopic debridement of the common bile duct, LHEC is the most optimal surgical intervention.

Surgical treatment of CC in patients with LC with functional class "C" presents an extremely high risk. In these patients, minimally invasive interventions (EPST, CHS) are promising.

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Bukhara State Medical Institute named after Abu Ali ibn Sina

✓ **Resume.**

This article presents a review of the literature, which presents the various manifestations that occur in the immune system after a traumatic brain injury.

Key words: traumatic brain injury, immunity, cytokines, lymphocytes, interleukins.

ИЗМЕНЕНИЯ ПРОИСХОДЯЩИЕ В ИММУННОЙ СИСТЕМЕ ПОСЛЕ ЧЕРЕПНО-МОЗГОВОЙ ТРАВМЫ

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✓ **Резюме**

В этой статье представлен обзор литературы, в котором рассмотрены различные проявления, происходящие в иммунной системе после черепно-мозговой травмы.

Ключевые слова: черепно-мозговая травма, иммунитет, цитокины, лимфоциты, интерлейкины.

ТРАВМАТИК МИЯ ЖАРОҲАТИДАН КЕЙИН ИММУНИТЕТ ТИЗИМИДА ЮЗАГА КЕЛАДИГАН ЎЗГАРИШЛАР

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✓ **Резюме**

Ушбу мақолада травматик мия жароҳатидан кейин иммунитет тизимида юзага келадиган турли хил қўринишларни ўрганган олимларнинг адабиётлари қўриб чиқилди.

Калит сўзлар: травматик мия шикастланиши, иммунитет, цитокинлар, лимфоцитлар, интерлейкинлар.

Relevance

Traumatic brain injuries, high mortality and disability of the victims, the real increase in the number of neurosurgeons, as well as long-term forecast data prioritize the problem of Neurosurgery [5,11]. Neurosurgery statistics require a more stringent study of the medical and social aspects of this problem, with a constant increase in numbers, significant disability and high mortality. In order to further improve organizational measures to provide neurotraumatic assistance to the population, it is important to study this problem under a wide epidemiological coverage column [6,15]. At the beginning of the 21st century, injuries still remain relevant. The problem of injury is determined by its prevalence, medical, social and economic importance (high cost of medical care, high level of death and

disability, significant direct and indirect losses due to the loss of the Labor potential of the society) [2, 11]. Every year, the world receives 1.5 million dollars from various injuries.more than 2,4 million people die.more than one person becomes disabled. [15].

The World Health Organization estimates that around 80 million accidents occur annually in the European region. The weight of the injury load is almost 2,200 injuries per day or more than 90 cases per hour. Approximately 30 hospitalizations and 300 outpatient treatments are required for each case of death from an injury [11]. In Russia, for a year, the total economic and medical-social harm inflicted on society, the rate of death from injuries among people of working age, in the first place in the total composition of mortality indicators

(52%), ahead of cardiovascular and Tumor Diseases [13,18]. Brain injury is the leading cause of disability and temporary disability in the population, accounting for 30-40% of injuries, and cardiovascular and oncological diseases are also the leading causes of death among people of active age [14,12].

In developed countries, injuries in the structure of the causes of death of the population follow cardiovascular and oncological diseases, and according to the total economic and medical-social damage caused to the society, head injuries are in the first place [6,7]. In order to obtain information about the true prevalence of a brain injury, a population survey is conducted, which is organized specifically to take into account all cases of injury from a population living in a particular area, that is, a brain injury. The amount of head injury prevalence varies in different regions of the country and abroad, depends on many factors, an incomplete report due to frequent non-renewal, an incomplete report due to the fact that the victims of the injury were not registered in the registry, and other occlusive causes. [15,23]. In recent decades, traumatic brain injury has been one of the most important social and medical problems. This is due to the increased incidence of injuries and the severity of the injuries, the predominance of combined injuries in their composition and the high incidence of death [12,13,14]. Among the survivors, disability is high, and its leading causes are mental disorders, psychopathic states, gross motor and speech disorders, and epileptic seizures [1,15,21].

It is shown that already in the early period after TBI, leuko-, lympho- and monocytopenia develop, the activity of the effector link of cellular immunity decreases with an increase in the relative amounts of CD8+, CD20+, CD95+ cells and the levels of cytokines regulating inflammation. To restore disturbed neuroimmune interactions after TBI, it is possible to use immunomodulators that have neuroprotective capacity and the potential to stimulate the regenerative activity of the central nervous system [20, 29]. One of the immunomodulators that have neuroreparative and neuroprotective activity is a drug of recombinant human rencoleukin — rencoleukin. It is known that in the immune system, rencoleukin is produced by T cells in response to antigenic and mitogenic stimulation, ensuring their proliferation. However, the essential growth factor of rencoleukin is only for the regulatory suppressor T-lymphocytes, the function and viability of which it supports. Rencoleukin deficiency in the immune system of animals leads to the spontaneous development of an autoimmune disease

characterized by T-cell infiltration (and in some cases, the deposition of autoantibodies), affecting certain organs and systems [23].

In the CNS, rencoleukin is synthesized in brain neurons, and the alpha chain of the high-affinity receptor (CD25) for this cytokine is expressed on microglial cells. In the case of impaired rencoleukin production only by brain cells (without a deficiency of this cytokine in the immune system), the number of T-cells entering all areas of the brain doubles, creating conditions for the development of autoimmune damage to the central nervous system [12, 19]. That is, with a deficiency of rencoleukin, disorders develop both in the immune system and in the central nervous system, and the correction of the processes occurring in the central nervous system is possible with the peripheral administration of rencoleukin. Thus, intraperitoneal administration of rencoleukin increases the activation of microglia, leading to metabolic changes and increased expression of the alpha chain of the rencoleukin receptor [29]

Clinical data have shown that severe traumatic brain injury causes a decrease in cerebral blood flow by 2-3 times due to an increase in the tone of the arteries and arterioles. The activity of the HPAX and the hypothalamic-pituitary-gonadal system (HGGs) as stress systems whose functional activity reflects the activation of regulatory mechanisms [12] aimed at overcoming the consequences of TBI was evaluated by the concentration of corticosterone and testosterone in the blood of animals after TBI. The results indicate that in the first hours after TBI, hormone levels change in different directions: the concentration of testosterone (Ts) in the blood significantly decreases ($p < 0.05$), while the concentration of corticosterone (Cs) after TBI increases sharply ($p > 0.05$). A decrease in testosterone levels, as well as an increase in corticosterone levels, are sensitive indicators of the development of stress and are adaptive in nature, aimed at optimizing protective reactions [17].

Further observation revealed that the level of corticosterone after a short-term peak significantly decreases to the level of intact animals by the 7th day, and then increases by the 14th day to a level 2 times higher than in animals in the control group. The level of testosterone after a short-term drop begins to increase by the end of the first day, almost reaching normal values by the 3rd day, the maximum values are recorded on the 7th day, after which they return to the level of intact animals by the 14th day after TBI.

After TBI, experimental animals develop neuroendocrine changes that reflect the activation of stress regulatory mechanisms, which is

manifested in a decrease in testosterone levels, a significant increase in the level of corticosterone secretion, followed by a pronounced suppression of the level of both hormones. It was previously shown that an increase in the concentration of endogenous corticosterone within physiological limits, for example, during the development of a stress reaction, not only does not inhibit, but also has a stimulating effect on proliferative processes, optimizes the implementation of the immune response, and also induces the release of a number of pro-inflammatory cytokines [27]. The observed absence of an adaptive increase in the level of Cs in injured animals can be regarded as unfavorable, associated with the risk of developing hyperactivity of immune responses, which can be accompanied by both increased inflammatory damage and the development of autoimmunity [18]. Prolonged inhibition of gonadal hormone function is also an unfavorable factor contributing to the development of depression and other stress-induced pathological conditions [20].

The hormonal imbalance observed in animals after TBI was associated with an increase in cytotoxic and proliferative activity of splenocytes, accompanied by an increase in apoptotic death of a significant part of the cells. The described disorders of neuroimmune interactions in traumatic brain injury were corrected to a certain extent in rats that received recombinant human oncostatin A (oncostatin A) after injury. Three-time administration of oncostatin A both normalized changes in the peripheral immune system by day 14 after injury (in terms of splenocyte proliferation and apoptosis), and restored testosterone levels and increased Cs levels in injured animals. Normalization of the ratio of the number of proliferating splenocytes to the number of cells that entered apoptosis when using oncostatin A may indicate that this indicator is informative for assessing the dynamics of immune processes after TBI. The published results of clinical studies indicate that the administration of oncostatin A to patients with TBI significantly improves T-cell parameters and reduces the intensity of post-traumatic inflammatory processes, determining a positive outcome of the disease [25].

The problem of long-term complications of severe traumatic brain injuries is in fact possible not only with the complex of pathophysiological changes formed in the immune system, but also with the development of post-traumatic complications of the brain, structural and functional changes in the central nervous system, as well as with the onset of delayed deleterious lesions to the structures of the brain. Currently, the nervous and immune systems are increasingly

considered as the only psychoneuroimmune system to regulate general homeostasis and adapt the body to the changing conditions of the external and internal environment [16,22]. Molecular mechanisms of interaction between components of the psychoneuroimmune system have been well studied, along with hormonal factors provide them mediators of the neuroimmune effect — cytokines [3,10].

The highest level of regulation in this system leads to complex control disorders of the immune system functions, accompanied by the development of traumatic brain injury, posttraumatic immunodeficiency, brain and immune diseases posttraumatic encephalopathies fatal processes of the brain. [11,18] all of the above, indicating the presence of a single Psychoneuroimmune system, should be considered in terms of the presence of differences in higher nerve activity and immune response types in mammals. However, very few studies have been conducted in this direction, the effect of traumatic brain injury on the psycho-neuroimmune system, depending on the type of nervous system, there are relatively few comparative studies, and in this respect there is little data on the study of the long-term post-traumatic period. [1, 9, 26.]

In addition, the lack of clear criteria for Central dysregulation of the immune system, limiting the possibility of targeted correction. In this regard, the use of natural brain regulators of active substances and peptides (or their synthetic analogues) is promising, the main purpose of which is to protect against stress damage, to coordinate the work of analgesia and tissues, to receive signals from the relevant systems of organs, systems and tissues of the body as a whole, and to carry out the coordination [10,17,24.].

Traumatic brain injury is a multifunctional disease characterized by high mortality and disability of a large part of the victims. Primary lesion in the central nervous system is more extensive, secondary lesion and leads to the development of neuroinflammation, which ultimately determines the level of neurodegeneration, the development of Neurological Disorders and behavioral disorders [17,21,23]. Against the background of a head injury in the immune system, multidirectional seizures that affect the composition of T-and V-lymphocytes develop, which leads to bronchopulmonary complications and autosensibilization of the body, in particular, the appearance of autoantibodies to antigens of brain structures [10,26].

In general, in the lesion of brain tissue, the primary action begins with the activation of

resident cells of the immune system (microglia and pericytes), the dendritic cells, macrophages, as well as other cells and molecular components are involved in the immune response. [19, 24].

Corticosteroids are the most important negative regulator of congenital adaptive immune responses and the acute stage of inflammation. Activation of corticosteroid production begins by proinflammatory cytokines by triggering the hypothalamic-pituitary-adrenocortical system (HPAS). In experimental brain injury, the activation of this adaptive system leads to an increase in the level of corticosteroids and a decrease in the functional activity of immunocompetent cells [8,27]. It is shown that in the first period after brain injury, the activity of T-lymphocytes in the cellular immune system decreases with the increase in the relative amount of subpopulations and the level of cytokines, regulates the mediators of intercellular interactions in the blood, developing Leuko -, lympho- and monocytopenia [9, 20]. To restore the disturbed neuroimmune system after a head injury, it is possible to use immunomodulators in combination with the potential to stimulate neuro-ability and regenerative activity. It is possible to use immunomodulators with neuroprotective capabilities and the potential to stimulate the regenerative activity of the central nervous system to restore the impaired neuroimmune system after a head injury [16, 19].

It is known that in the immune system, interleukin-2 is produced by T-cells in response to antigen and mitogen stimulation and promotes their proliferation. However, interleukin-2 is only an indispensable growth factor for regulating suppressor T-lymphocytes, supporting its function and viability [8, 10]. Lack of interleukin-2 in the immune system of animals leads to the spontaneous development of autoimmune disease, characterized by T-cell infiltration (and in some cases the deposition of autoantibodies), affects some organs and systems [11,15]. In the central nervous system, interleukin-2 is synthesized in brain neurons, which are expressed in receptor microglial cells that have a high effect on cytokine. Only in the case of suppression of interleukin -2 production by brain cells (without this cytokine deficiency in the immune system), the number of T-cells in all areas of the brain doubles in order to develop autoimmune damage to the central nervous system [19,22].

Active management of the immune process in the post-traumatic period and targeted immunomodulation can significantly change both the course and the clinical outcome in patients with TBI. In the pathogenesis of TBI, there are several

periods: a) primary damage caused by direct or indirect bruising, which leads to a shift or stretching of brain tissue and immediate (necrotic) cell death, subdural hematoma and cerebral ischemia, b) secondary damage with diffuse damage to axons, local and systemic inflammatory reactions [3,8]. A number of authors distinguish a third period, which is characterized by regeneration and restoration of brain function or slowly progressing degenerative changes in the central nervous system [10,14].

The phase of non-mechanical damage, which is progressive and lasts from several hours to many days or months, significantly contributes to the development of neurological disorders. Damage to the brain vasculature at the time of TBI disrupts the integrity of the blood-brain barrier (BBB), leads to rapid penetration of immune cells into the brain parenchyma and the lesion site, and the development of local and systemic inflammatory reactions [13,15]. Acute and chronic inflammatory reactions caused by the activation of local and systemic immune responses have a dual character and can either aggravate pathological disorders after injury, or contribute to the process of recovery and regeneration [2,14].

The distinguishing features of secondary brain damage reactions after TBI may be the destruction of the BBB, the infiltration of the injury site by immune cells, oxidative stress, glutamate excitotoxicity, and the development of neuroinflammation, which may develop immediately after the primary mechanical injury [3, 17]. The production of inflammatory mediators is normally influenced by the mechanisms of neuroendocrine and immune regulation based on the feedback principle with the hypothalamus-pituitary-adrenal system and efferent cells of the sympathetic nervous system [28,30]. With TBI an imbalance between these regulatory factors can increase the suppression of immunity and lead to immunological dysfunction, immune insufficiency or increased susceptibility to infection, on the one hand, and to the development of neuro-autoimmune reactions of the cellular and humoral type, on the other [26,29].

In addition, TBI causes a systemic inflammatory response in the body against the background of a damaged BBB and this can lead to an increase in the number of infiltrating immune cells in the brain and cytokines in the body. These cells and molecules gain access to the brain parenchyma, primarily in the damaged area, and worsen the pathogenesis of TBI [24,30]. Thus, in studies on rats, a systemic and intracerebral increase in the level of neutrophils (neutrophilia) was shown against the background of increased

BBB permeability in traumatic damage to the cerebral cortex and administration of granulocyte - colony-stimulating factor to animals. Impaired BBB function after TBI can cause not only the entry of inflammatory cells and cytokines into the brain, but also the release of pro-inflammatory molecules, such as cytokines, arachidonic acid metabolites, complement factors, acute phase proteins, and especially autoantigens and proteins of damaged nerve cells through the damaged BBB from the brain to the circulation. This can lead to the development of a systemic autoimmune and inflammatory response syndrome [22,23], which is characterized by the occurrence of a hyper-inflammatory reaction in the body and the production of long-existing autoantibodies to brain antigens, which can enter the brain and damage nerve cells. In TBI, it is possible for lymphocytes and macrophages of the peripheral blood and brain to secrete anti-inflammatory molecules that can block the production of pro-inflammatory cytokines, such as interleukin (IL)-1 β , IL-6 and tumor necrosis factor- α (TNF- α), which can block the development of an inflammatory response and inhibit the regeneration of nerve cells in the area of brain damage. An uncontrolled increase in the content of inflammatory cytokines in the blood and brain parenchyma after TBI can lead to multiple organ dysfunction syndrome and insufficiency up to death [25,28].

The mechanisms of the development of various immune responses of pro-and anti- inflammatory orientation in CHTM, despite the almost century-old history of studying the immunology of neurotrauma, have not been sufficiently studied. This is probably due to both the nature and pathogenesis of CHTM itself, the peculiarities of BBB disorders, and the constantly changing ideas about immune reactions, their role in neurodegenerative and regenerative processes in the body [23,26,30]. After primary damage, cellular endogenous inflammatory responses are triggered in the brain to repair the damaged tissue, but often excessive production of proinflammatory cytokines is likely to become an important driver of pathological progression in TBI [21,27].

Thus, after TBI, despite post- traumatic immunosuppression, there is activation of cells of the systemic immunity and local immunity of the brain, increased secretion of a large number of inflammatory mediators, such as cytokines, chemokines, which are involved in the implementation of the inflammatory response and the interaction between the innate and acquired immunity. The exact role of cytokines and the nature of immune processes in TBI have not been established. The presented clinical and

experimental data indicate that cytokines synthesized by immune cells play a regulatory role in determining both the pathological and protective effects of local and systemic immune processes in trauma. Establishing the dual role of immune responses in TBI expands our understanding of the pathogenesis of neurotrauma. We can conditionally distinguish several stages of their formation: 1) the initial activation of innate immune cells, namely micro-glia in the brain and the removal (phagocytosis) of damaged tissue, 2) the synthesis of cytokines by microglia and the involvement of peripheral immune cells in the brain parenchyma, 3) the development of systemic, specific immune and inflammatory reactions in the body. At each of these stages, the phenomenon of "duality" and the switching of the direction of immune responses from pro - inflammatory to anti-inflammatory, from immunopathological, is possible on immunosuppressive, from neurodegenerative to stimulating the regeneration of damaged brain tissue immune processes. Expanding the understanding of the functions of immune cells and their different effects on the brain allows a broader approach to assessing the significance of immune responses in the pathogenesis of TBI. Further study of the multidirectional nature of immune responses in TBI will clarify their pathogenetic and compensatory significance, find methods of their immunomodulation, which will help to reduce neurodegeneration, disability of patients and improve the results of treatment of neurotrauma.

The data presented in this review on the various variability of regulatory subpopulations of T-lymphocytes in traumatic brain injuries indicate that the subtypes of immune process regulation have not yet been fully studied by the researchers. Regulatory cells of the immune system play an important role in the pathogenesis of traumatic brain injury, autoimmune diseases, recurrent and recurrent infections, allergic diseases and oncological diseases. These cells further explore the possibilities of further investigation of the methods of development and functioning of subpopulations, developing new approaches in the treatment tactics for traumatic brain injuries.

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✓ *Resume*

Bart The article deals with chronic heart failure in the elderly population. Prevalence, risk factors, features of clinical course, and diagnosis of heart failure in elderly patients are described.

Key words: chronic heart failure, elderly population, coronary artery disease, arterial hypertension, heart failure with preserved ejection fraction.

ХРОНИЧЕСКАЯ СЕРДЕЧНАЯ НЕДОСТАТОЧНОСТЬ: ОСОБЕННОСТИ И КЛИНИЧЕСКИХ ПРОЯВЛЕНИЙ В ПОЖИЛОМ ВОЗРАСТЕ

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✓ *Резюме*

Статья посвящена хронической сердечной недостаточности у лиц пожилого возраста. Освещаются распространенность заболевания, факторы риска, особенности клинической картины и диагностики сердечной недостаточности в пожилом возрасте.

Ключевые слова: хроническая сердечная недостаточность, пожилой возраст, ишемическая болезнь сердца, артериальная гипертензия, сердечная недостаточность с сохраненной фракцией

СУРУНКАЛИ ЮРАК ЕТИШМОВЧИЛИГИ: ҚАРИЛИҚДА КЛИНИК КЎРИНИШИ ХУСУСИЯТЛАРИ

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✓ *Резюме*

Мақолада кекса одамларда сурункали юрак етишмовчилигининг ўзига хос кечишига бағишланган. Бу касаллигининг тарқалиши, хавф омиллари, клиник кўриниши хусусиятлари ва кекса ёшдаги юрак етишмовчилиги диагностикасини ўз ичига олади.

Калит сўзлар: сурункали юрак етишмовчилиги, қарилик, юрак ишемик касаллиги, артериал гипертензия, фракцияси сақланиб қолган юрак етишмовчилиги.

Relevance

Chronic heart failure (CHF) is a syndrome with complex the vocabulary of characteristic symptoms (shortness of breath, fatigue, decreased physical activity edema) and clinical signs (enlargement of the cervical veins, small bubbles wheezing in the lungs, displacement of the apical first push to the left). The root cause is violation of the structure or function of the heart, as a result of which it is not able meet the body's needs for oxygen at normal pressure on-fullness of the heart (this is possible only with increasing the filling pressure of the chambers hearts).

Population aging and formation chronic heart failure is closely related, since with age cardiovascular system undergoes involuntary

changes, predisposing to the development of cardiac dysfunction. Thickening of the intima, hypertrophy of the internal elastic membrane branes, increased collagen in the vascular wall are accompanied by progressive loss of elasticity of the croup arteries, which leads to an increase systolic and pulse arterial pressure , increased afterload and systolic vascular stress.

Decreased functional reserves of the myocardium in the elderly makes them more vulnerable to the development of chronic heart failure (both with and without myocardial damage) in various clinical situations (anemia, infections, rhythm disturbances, arterial hypertension, myocardial infarction, cerebrovascular accident,

diabetes mellitus, renal failure). When examining elderly patients, pathological changes in various organs and systems are revealed, due to many reasons and age-related changes.

Chronic heart failure (Syue) is a syndrome with a complex of characteristic symptoms (shortness of breath, fatigue, a decrease in physical activity, edema) and clinical manifestations (swelling of the vessels of the neck, steamed in the lungs). The main reason for this is a violation of the function of the heart, as a result of which it can not meet the needs of the body.

Chronic heart failure has been identified in 23 million people around the world. In our country, the clinically expressed II functional class (FS) is threeeraydi in 5,1 million people, III-IV functional class – threeeraydi in 2,4 million people [1-3]. Estimated risk factors for established and developing chronic heart failure are listed in Table 1.

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A feature of chronic heart failure in old age is the presence of several etiological factors leading to its development. The main causes of chronic heart failure in people of this age group are arterial hypertension, coronary heart disease and their combination, as well as diabetes mellitus and obesity in combination with cardiovascular pathology.

In elderly people, the functional reserves of the myocardium are reduced and lead to the development of various levels of chronic heart failure. information on clinical cases (anemia,

infections, rhythm disturbances, arterial hyperplasia): the presence of myocardial infarction, cerebral circulation disorders, diabetes, chronic renal failure in elderly people makes the clinic even more difficult. [5,6]

In the examination of elderly patients there will be pathological changes in different organs and for many reasons and age changes.

The characteristic feature of chronic heart failure in old age will be several etiological factors that lead to its development. People of this age group, the main causes of Syue are hypertension, heart disease and their combination, as well as in combination with diabetes and obesity, which further exacerbates the course of cardiovascular pathology. In old age, Syue is often accompanied by a decrease in its fraction. [5,7]

Unlike young people, Syue does not appear as an isolated disease in old age and is always accompanied by other diseases. Tiradi the presence of many diseases at the same time changes the clinical picture and makes diagnostics difficult, so it will be necessary to choose the optimal and safe treatment.

In addition to polymorbiditis, elderly patients are characterized by a manifestation of low symptoms. There will be chronic heart failure or minimal complaints that almost do not bother patients, because joint diseases are often hidden..

Classic heart symptoms-this is shortness of breath, peripheral edema and fatigue. As one of the first symptoms of the disease, shortness of breath occurs only in physical labor initially, and disappears when physical labor ceases. Later, when the disease progresses, shortness of breath appears in a slight physical effort, which later also appears in a calm state. The cause of this symptom is venous dimpling in the framework of small blood circulation, a decrease in gas exchange in the lungs and a shortage of the respiratory center hansirashninng also appear in the sitting position, which indicates a pronounced violation of hemodynamics and is indicative of significant dimming in the framework of small blood circulation.

Along with shortness of breath, patients are often disturbed by a cough that occurs mainly at night or after exercise in a calm state. Its appearance is explained by the dimpling of blood in the lungs, swelling of the bronchial mucosa and a shortening of the cough receptors.

Table 1.
Dangerous factors that cause chronic heart failure

Key clinical risk factors Age, male sex, arterial hypertension, Hypertrophy of the left ventricle, myocardial infarction heart defects, diabetes
Small clinical risk factors Smoking, dyslipidemia chronic kidney diseases, albuminuria, sleep apnea syndrome, anemia, a sedentary lifestyle, nutrition, low socio-economic status, psychological stress
Peripheral cardiomyopathy Infectious diseases Viral, bacterial, parasitic (Chagas disease)
Genetic predispositions family Anamnesis, congenital defects
Morphological predicates Diastolic enlargement of the left ventricle, Hypertrophy of the left ventricle Dysfunction of the left ventricle, Left ventricular diastolic dysfunction Biomarkers Activation of immunitet (tumor necrosis factor, interleukin – 6, C – reactive protein, insulin-like growth factor), natriuretic peptids, trope of hearts

The first complaints of chronic heart failure are heart palpitations during physical activity , followed by the appearance even in a calm state. Heartbeat occurs in the form of sinus tachycardia as a result of the activation of the sympathoadrenal system.[3,4]

Often, with heart failure, nocturia occurs, which occurs relatively early. Nocturia is caused by increased renal blood flow, glomerular filtration rate and natriuretic peptide level, which contributes to increased urination. [1.2]

At the initial stage of the disease, the tumor appears on the heels on the legs and in the second half of the day. The causes of edema syndrome in the body are different, but first of all they occur as a result of the retention of sodium and water in the body, venous dimpling within the framework of large blood circulation, and an increase in the gostatic pressure in the capillary system. Peripheral edema is usually not observed in patients with proper treatment and in the case of decompensated systolic myocardial dysfunction.

A decrease in blood flow in the abdominal organs and an increase in venous pressure lead to a decrease in hepatic blood flow and liver damage, basically which morphological and functional changes lie. The mechanisms leading to liver hypoxia in chronic heart failure are passive venous congestion.[5]

Most often, with heart failure, most often in the early stages, nocturia occurs. The cause of nocturia is an increase in renal blood flow, an increase in the level of glomerular filtration and an increase in the level of natriuretic PID.[6]

A decrease in blood flow in the abdominal organs and an increase in venous pressure lead to a decrease in blood circulation in the liver, and the liver is damaged, which leads to morphological and functional changes in the liver . Liver injury at Syue is fraught with steamed Hepatology, ischemic hepatitis, cardiac fibrosis and liver cirrhosis . At an older age, often an increase in systolic dysfunction of the left ventricle and heart decompensation lead to ischemic hepatitis . The leader of this condition is heart rhythm disorders, acute heart infarction, pulmonary artery thromboembolism. In the elderly, the increase in aminotransferases in the blood, the emergence of coagulopathies and kidney dysfunction, provokes thinking about Syue. [3]

In an elderly patient, shortness of breath, fatigue or peripheral edema are reported not only from Syue, but also from other diseases and pathological conditions, such as chronic obstructive pulmonary disease, obesity, anemia, depression, cognitive impairment, which is considered an initial sign. [5]

The first signs of chronic heart failure are fatigue, muscle weakness, heaviness in the legs , often due to normal daily physical exertion

(washing, cleaning the bedroom), it should be borne in mind that patients do not pay much attention to this with age restrictions in this group when performing physical activity. Because they change the way of life when they realize it with the aim of reducing the obvious manifestation of their clinical variant. In elderly patients, changes in the musculoskeletal system and cerebrovascular changes restrict active movement.

Pathology of the musculoskeletal system (arthritis, arthrosis), chronic venous and lymphatic insufficiency often mask the appearance of heart tumors.

Older patients, in addition to the above symptoms, again complain of headaches, dizziness, singapial States, mood swings, irritability, sleep disturbance.

In the detection of Anamnesis, 38% of elderly patients with chronic heart failure are often difficult to detect conjunctival disorders. With the presence of conjunctival disorders, it becomes difficult to collect Anamnesis. They may not be able to follow the doctor's regimen and recommendations, or may not remember or ignore information, symptoms, unless their condition worsens significantly until the development of a lung tumor.

Chronic heart failure significantly impairs the quality of life to the level of restriction of their full quality of life. Affects the level of life of patients, especially in the elderly, depression, psychological anxiety, social isolation. [1,2]

Diagnosis of chronic heart failure in old age, as well as in the younger age, is based on the data of complaints assessment, Anamnesis, during the physical movement and calm state of such clinical manifestations as, on the basis of the object and instrumental studies. When collecting Anamnesis, it is necessary to pay attention to the presence of cardiovascular diseases: heart disease, the presence or absence of tonsillitis, myocardial infarction, heart rhythm disorders, hypertension, episodes of arrhythmia. It should also be noted that hypertrophic or dilatation cardiomyopathies are noted in family Anamnesis. [4]

The presence of cardiomyopathies, death from seizures, implantation of an artificial pacemaker, as well as bone muscle diseases are indicative of the development of heart failure. Some may have symptoms similar to symptoms of lung, kidney, liver disease, anemia heart failure. This is very important in the diagnosis and evaluation of the functional class of chronic heart failure.

Diagnosis of chronic heart failure:

1) specific symptoms of heart failure (shortness of breath, fatigue and limitation of physical

activity, edema) complaints during a calm state or during physical labor;

2) Physical Examination data (examination, palpation, auscultation) or clinical signs;

3) data of the obektiv (instrumental) research methods.

It should be remembered that no classic symptoms of chronic heart failure - shortness of breath, swelling of the ankles, fatigue – can be used to diagnose the arrival of the individual. The attending physician can determine the presence of heart failure, taking into account the available Anamnesis data, clinical signs of the disease. Thus, patients in the elderly are characterized by polymorbidity, and heart failure is a multi-systemic sign. In most cases, shortness of breath, fatigue and peripheral edema may occur.[4]

In addition to the symptoms, it is important to take into account the clinical signs of heart failure, which the doctor determines independently, without the use of special equipment. So, dilatation of the Left Ventricle manifests itself signs of cardiomegaly (displacement of the apical impulse; an increase in the boundaries of cardiac dullness; the appearance of a third tone); fluid retention in the body - congestive symptoms (edema of different localization, more often on the legs, which, as a rule, are symmetrical; hepatomegaly; swollen cervical veins; fine bubbling rales);neuroendocrine activation - increased tone of the sympathetic nervous system (tachycardia). When objectively examining the patient, it is necessary to take into account the fact that the character and the severity of his existing clinical manifestations depend on the severity of heart failure. [3]

Support points when setting diagnosed with Chronic Heart Failure are:

1) characteristic symptoms of heart failure (shortness of breath, fatigue and physical activity limitations, edema) at rest or during exertion or the patient's complaints;

2) physical examination data (examination, palpation, auscultation) or clinical signs;

3) data of objective (instrumental) survey methods

It should be remembered that none of the classic symptoms of CHF - shortness of breath, swelling of the ankles, fatigue – alone can be used to make a diagnosis. The attending physician, taking into account the available history data, clinical symptoms and signs of the disease, can diagnose heart failure.

Thus, patients of older age groups are characterized by polymorbidity, and heart failure is of a multisystem nature. Shortness of breath, increased fatigue and peripheral edema can be

caused by many noncardiogenic factors and not always indicate the presence of heart failure in the patient. The doctor should always assume the cardiovascular causes of the patient's illness and carry out diagnostic search for heart disease and hypervolemia.

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INFLUENCE OF MEDICINAL PREPARATIONS ON BEHAVIORAL REACTIONS OF
ANIMALS OF THE POST-TRAUMATIC PERIOD

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✓ *Resume*

This article provides information on the results of pharmacological correction in the post-traumatic period of severe traumatic brain injury in 3-month-old white outbred rats. In a scientific study, traumatic brain injury was performed using the "traffic accident" model in order to study extracranial complications and correct them with widely used drugs.

Key words: traumatic brain injury, kidney, morphological changes in internal organs, white outbred rats.

ВЛИЯНИЕ ЛЕКАРСТВЕННЫХ ПРЕПАРАТОВ НА ПОВЕДЕНЧЕСКИЕ РЕАКЦИИ
ЖИВОТНЫХ ПОСТТРАВМАТИЧЕСКОГО ПЕРИОДА

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✓ *Резюме*

В данной статье представлены результаты фармакологической коррекции в посттравматическом периоде тяжелой черепно-мозговой травмы у 3-месячных белых беспородных крыс. В научном исследовании черепно-мозговая травма была проведена с использованием модели «дорожно-транспортного происшествия» с целью изучения экстракраниальных осложнений и их коррекции с помощью широко используемых лекарств.

Ключевые слова: черепно-мозговая травма, почка, морфологические изменения внутренних органов, белые беспородные крысы.

ЖАРОҲАТЛАНИШДАН КЕЙИНГИ ДАВРДАГИ ҲАЙВОНЛАР ҲАТТИ-ҲАРАКАТ
РЕАКЦИЯЛАРИГА ДОРИ ВОСИТАЛАРИНИНГ ТАЪСИРИ

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✓ *Резюме*

Ушбу мақолада 3 ойлик оқ зотсиз каламушлардаги оғир бош мия жароҳатидан кейинги даврда фармакологик коррекциялаш тўғрисидаги маълумот натижалари берилган. Илмий тадқиқот "йўл транспорт ҳодисаси" модели ёрдамида юзага келадиган бош мия жароҳатидан кейинги экстракраниал асоратларни юзага келиш сабабларини ўрганиш ва кенг қўлланидиган дори воситалари ёрдамида коррекциялашга қаратилган.

Калит сўзлар: бош мия жароҳати, буйрак, ички органлардаги морфологик ўзгаришлар, оқ зотсиз каламушлар.

Relevance

It is known that traumatic brain injury is one of the serious problems of modern medicine, which plays a major role in the development of morbidity and mortality in economically developed countries [1,3,4]. Mortality in severe

traumatic brain injury reaches 80%, and among those who survived up to 75% of victims remain with severe neurological, including intracranial and extracranial complications, leading to 1-2 groups of disability of the

population. For many years, scientists from all over the world have been drawing attention to this problem, in particular, to pharmacotherapy in the post-traumatic period [2].

Material and methods

For this study, laboratory white outbred rats were used: 20 males and 10 females of three months of age, the average weight of which was 115.6 ± 9.3 g. Work with laboratory animals was carried out in compliance with the basic regulatory and ethical requirements. Laboratory animals were kept in a vivarium in plastic cages with small wood chips at room temperature 21 ± 3 °C for 12-hour light and dark replacement, air humidity 58% in accordance with the standards for keeping laboratory animals. All animals were divided into 3 groups, that is, the first group consisted of animals not inflicted with head trauma (control, $n = 10$), the second group consisted of animals that had a traumatic brain injury, without drug correction (experimental, $n = 10$), and the third the group consisted of (experienced, $n = 10$) - animals that had suffered a traumatic brain injury and were corrected with drugs. Until today, many methods have been used to inflict injury, such as "free fall of the load", "inertial", "hydrodynamic". For our experiment, the "road traffic accident" model was used. In the experiment, the entire group of rats was subjected to craniocerebral trauma under the influence of light ether anesthesia. The experimental animals were fixed on a special home-made vehicle, and in order to avoid a fracture of the jaw, the head of the animal was

fixed on a soft pillow and at the end was injured. The glued rats on the vehicle were accelerated at a speed of 6.7 km per hour and hit a wooden obstacle with their frontal part of the head and were injured in the cranial part of the head. After injury, all animals received serious, serious injuries. Of these, 2 animals died during this experiment, 18 received serious, severe injuries. After injury, the animals were transferred to a special plastic cage and observed until the post-traumatic state was restored. During this period, some rats experienced asphyxiation, seizures, and bleeding. Approximately 25 minutes after the injury, the surviving animals were placed in their cage to return to a permanent, normal lifestyle. Test analyzes were carried out before and after traumatic brain injury to study the behavioral responses of animals before and after drug correction. To study the behavioral reactions of animals after traumatic brain injury using methods such as "Open Field", "Morris Water Maze" [5].

Open field. This test, called the "Open Field" method, is a brightly lit rectangular area of white 80×90 cm in size. It is limited on all sides by a height of 35 cm. After inflicting a traumatic brain injury on days 1, 7 and 14, 28, the animals were placed in the center arenas and the behavior of rats under new conditions was studied for 5 min. Approximately 45 minutes prior to this experiment, the rats were transferred to a quiet, dimly lit room, and during the same time period, any permissible manipulations, such as feeding and picking up, were minimized.



1



2

1- Figure: Morris Water Maze Test.

2-Figure: Test "Open field".

"Morris Water Maze", this test is mainly designed to study the spatial memory of animals. The Morris Water Maze is a pool of rubber, 160 cm in diameter and 70 cm high. The labyrinth was filled with water at a temperature of $21 \pm 2^{\circ}\text{C}$. The pool was filled with water up to 40 cm high, which is 1 cm higher than the platform located in the north western sector. Every day for 5 consecutive days, the rat was given 3 attempts, 1 min each, to find the platform. The platform was hidden under water. Animals were thrown randomly from 3 sectors (except for the northwest). For 5 days, the rats were daily accustomed to the experimental environment, and on the 6th day they inflicted a head injury. The spatial memory of animals was assessed on the 1st, 7th, 14th, 21st, 28th days after the application of traumatic brain injury, as well as after the use of drugs. The first group - control animals with craniocerebral trauma, as well as the 2nd - experimental group - are animals with craniocerebral trauma, but not treated with drugs, and the 3rd - experimental group - are animals with craniocerebral trauma that received drug treatment. Only 10 experimental animals, which were subjected to traumatic brain injury, were administered within 10 days drugs neuroxon - 0.001-0.002 g, magnesium sulfate - 0.04-0.05 ml of solution, piracetam - 0.01-0.02 ml of the solution and the animals were transferred to a special plastic cage, observed until the post-traumatic state was restored.

Results and discussion

The Morris water maze is especially used to assess cognitive impairment in experimental rats. This method is often used to assess the memory of animals after inflicted traumatic brain injury [5]. In this study, it was shown that on the 1st, 7th, 14th, 28th day after the injury in rats, the spatial memory mainly decreases, diagnosed by such indicators as the duration of

stay on the platform and the time to reach the platform sector. In this experiment, the percentage of time spent in the sector was significantly less compared to the same indicator in control animals, but the time required to reach the sector-platform was increased.

To assess the emotional and exploratory behavior of animals after traumatic brain injury, the "Open field" test was used. It was found that the number of visits to open field areas was significantly reduced in animals that received a traumatic brain injury, starting 1 day after injury, compared with the same indicators in control animals. In the experiment, the duration of the general running of the animal in the open field was determined during the study period (5 min). It was found that after injury on the 1st, 7th, 14th, 28th day, the total duration of running is significantly reduced in rats with a craniocerebral injury, compared with the same indicator in rats of the control group. In rats with a craniocerebral trauma, the average movement speed is reduced.

So, the data obtained proves that in the second and third groups, after traumatic brain injury in animals, indicators indicating exploratory activity decrease, and the level of depression and anxiety increases. Course administration of drugs to the third experimental groups such as neuroxon, magnesium sulfate solution, piracetam solution allows you to correct these disorders and restore the changed processes to the level characteristic of the first groups of control animals. In the second experimental groups of animals that did not receive treatment with the drugs indicated above, the behavioral reactions on the 1st, 7th, 14th, 21st, 28th days indicated a worsening of their condition compared to the third groups, which can indicate the onset of development by the 1st day of secondary intracranial and extracranial complications, which are a consequence of traumatic brain injury.



3



4

3- Figure: The horizontal arrangement of the experimental object before the infliction of traumatic brain injury. **4-Figure:** Used medications.

Conclusion

The obtained data, during the experiment, allow us to conclude that after the administration of drugs such as neuroxon, magnesium sulfate solution, piracetam solution after traumatic brain injury in rats, it is possible to correct these disorders and restore the altered processes to the level characteristic of the first groups of control animals.

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DIAGNOSTIC CRITERIA FOR CORONAVIRUS INFECTION IN CARDIOVASCULAR DISEASES AND PROTECTING PERSONNEL FROM INFECTION

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✓ Resume

Given the risk of cardiovascular complications in COVID-19, including exacerbation of pre-existing heart disease, acute myocardial injury, and drug-related cardiac arrhythmias, echocardiography (EchoCG) is one of the main diagnostic methods for evaluating patients with suspected infection or confirmed disease.

Conducting bedside echocardiography, which may be of diagnostic value if myocarditis is suspected as one of the manifestations of heart damage in coronavirus infection.

Key words: coronavirus infection, cardiovascular system, echocardiography, ultrasound examination, myocarditis.

КРИТЕРИИ ДИАГНОСТИКИ КОРОНАВИРУСНОЙ ИНФЕКЦИИ ПРИ СЕРДЕЧНО-СОСУДИСТЫХ ЗАБОЛЕВАНИЯХ И ЗАЩИТА ПЕРСОНАЛА ОТ ИНФЕКЦИИ

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✓ Резюме

Учитывая риск сердечно-сосудистых осложнений при COVID-19, включая обострение ранее существовавшего сердечного заболевания, острое повреждение миокарда и сердечные аритмии, связанные с приемом лекарств, эхокардиография (ЭхоКГ) является одним из основных диагностических методов для оценки пациентов с подозрением на инфекцию или подтвержденной инфекцией. болезнь.

Проведение прикроватной эхокардиографии, которая может иметь диагностическое значение при подозрении на миокардит как одно из проявлений поражения сердца при коронавирусной инфекции.

Ключевые слова: коронавирусная инфекция, сердечно-сосудистая система, эхокардиография, ультразвуковое исследование, миокардит.

KARDIYOVASKULYAR KASALLIKLARDA KORONAVIRUS INFEKTSIYASINI TASHXISLASH MEZONLARI VA XODIMLARNI INFEKTSIYADAN HIMOYA QILISH

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Buxoro davlat tibbiyot instituti

✓ Rezyume

COVID-19da yurak-qon tomir asoratlari, shu jumladan ilgari mavjud bo'lgan yurak kasalliklari, miokardning o'tkir shikastlanishi va giyohvandlik bilan bog'liq yurak ritmining buzilishi xavfini hisobga olgan holda, ekokardiyografi (EchoCG) infektsiyaga shubha qilingan yoki tasdiqlangan bemorlarni baholashning asosiy diagnostik usullaridan biridir. infektsiya. ... kasallik.

Koronavirus infektsiyasida yurak shikastlanishining namoyon bo'lishidan biri sifatida gumon qilinadigan bo'lsa, diagnostik ahamiyatga ega bo'lgan yotoq yonida ekokardiyografiya o'tkazish.

Kalit so'zlar: koronavirus infektsiyasi, yurak-qon tomir tizimi, ekokardiyografiya, ultratovush tekshiruvi, miokardit.

Relevance

The beginning of the 21st century went down in the history of world virology as a period of rethinking the ecological characteristics of coronaviruses and their epidemic potential. The SARS-CoV outbreak of Severe Acute

Respiratory Syndrome (SARS) initially demonstrated that coronaviruses can cause not only mild to moderate acute respiratory infections (ARI), but also severe primary viral pneumonia (up to fatal): according to the World

Health Organization (WHO), from 01.11.2002 to 31.07.2003 the mortality rate in the world was 9.6% (774/8096), while imported cases were registered in 29 countries (667 cases and 89 deaths) [1-3,7 -11,12]. The natural reservoir of SARS-CoV is bats (bats, microchiropters), which transmit the infection without clinical manifestations, but excrete the virus in saliva, urine and feces. Direct human infection by bats is possible, but most often they first infect small wild mammals, widely used for food in Southeast Asia, and from them - human infection.

The SARS outbreak has spurred active research on coronaviruses in bats, mainly in Asia. However, the next time coronaviruses showed their epidemic potential, at first glance, in an unexpected place - on the Arabian Peninsula, known for its arid landscapes. However, it should be borne in mind that the western part of this peninsula is in the monsoon zone, and the southwestern slopes of the El-Asir mountains are mainly covered with tropical forests; in addition, the central part of the peninsula is also often not a lifeless desert, covered with many islets of oases and water. Under these conditions, the populations of bats in Arabia are quite numerous and represent a natural reservoir of MERS-CoV, discovered in June-September 2012 when decoding fatal viral pneumonia in humans. The intermediate host of MERS-CoV, the one-humped camel (*Camelus dromedarius*), was unexpected. According to the WHO, at the beginning of 2020, mortality from MERS-CoV, including cases imported to 27 countries of the world, was 34.4% (866/2519) [1,3,7,8,13]. The turning point of 2019/2020 It went down in history as an outbreak of COVID-19 (coronavirus disease 2019), which was assigned the status of an emergency of international importance by WHO, and from March 11, 2020 - the status of a pandemic.

SARS-CoV-2 (Severe Acute Respiratory Syndrome, Coronavirus 2) is a new strain of coronavirus identified at the end of 2019 and causing a dangerous infectious disease - Coronavirus 2019 disease, as they say, COVID-19, is a single strand RNA virus. The main routes of transmission of the virus: airborne, dusty, contact. The fecal-oral route is being investigated for its feasibility and importance given the confirmed excretion of viable virus in feces. Transmission from sick people and asymptomatic carriers is possible [4,5,6]. Infection of host cells via angiotensin-converting enzyme receptor 2 (ACE2) receptor exopeptidase. ACE2 expression was found in lung tissue (type II alveolocytes), myocardium, kidneys, endothelium, intestinal

epithelium, which determines the likelihood of multiple organ damage and the risk associated with unwanted outcomes. The SARS-CoV-2 virus is not only the causative agent of pneumonia, but also causes serious systemic consequences [14,15]. Patients with cardiovascular diseases and risk factors for cardiovascular complications, such as male gender, old age, diabetes mellitus, arterial hypertension and obesity, were identified as particularly vulnerable groups with an increased risk of severe course, complications and fatalities. outcomes for new coronavirus infection COVID-19 [16]. In addition, a significant proportion of patients develop COVID-associated myocardial injury, which significantly increases the risk of in-hospital mortality [17]. In addition to arterial and venous thrombotic complications, manifested as acute coronary syndrome and venous thromboembolism, myocarditis plays an important role in patients with acute heart failure [18, 19]. This viral infection is often relatively easy to carry, but a high risk of complications is typical for some population groups (elderly people, people with chronic diseases, weakened immunity and, possibly, pregnant women) [15]. Given the risk of cardiovascular complications in COVID-19, including exacerbation of pre-existing heart disease, acute myocardial injury [20], and echocardiography is one of the main diagnostic methods for examining patients with suspected infection or confirmed disease. Any infectious process can provoke the development of acute chronic cardiovascular diseases (CVD) and exacerbations. Having only CVD is not associated with a higher risk of contracting coronavirus, but is associated with a higher risk of infectious complications. Elderly patients with underlying medical conditions are more likely to be infected with SARS-CoV-2, especially if they have hypertension, coronary artery disease (CAD), and diabetes mellitus (DM).

HA and diabetes mellitus are the most common (up to 30%) comorbidities in COVID-19, especially in patients over 60 years of age. Patients with severe COVID-19 in the intensive care unit have a higher mortality rate among patients with cardiovascular disease. With an average mortality of 2.9% with a diagnosis of COVID-19, with high blood pressure, it was 11%, with diabetes - 6.5%, with cardiovascular diseases - 21.5%.

In COVID-19, myocardial damage (diagnosed based on an increase in the level of highly sensitive troponin I), acute heart damage (27.2% of cases), shock (8.7%) and arrhythmias (56.7%), the percentage of thrombus formation in the heart

chambers (7 %), most patients with these complications required intensive therapy. It is argued that a higher prevalence of CVD in elderly and senile patients (according to recent reports) leads to functional disorders of the immune system, which leads to an increase in the level of ACE-2.

Cardiovascular disease can be diagnosed in 47% of patients who die from COVID-19 infection.

Possible mechanisms:

1. Destabilization of existing cardiovascular diseases.

2. Chronic damage to the cardiovascular system

3 acute heart damage

4. Cardiotoxicity of antiviral drugs.

A) ACE2 signaling pathways involved in the cascade of cardiac lesions (decreased expression of ACE2, dysregulation of the renin-angiotensin system);

B) Pathological systemic inflammatory response, which manifests itself as a "cytokine storm" caused by an imbalance in the response of T-helper types 1 and 2, leads to multiple organ failure, including damage to the cardiovascular system;

C) Respiratory dysfunction with hypoxia (oxidative stress, intracellular acidosis and mitochondrial damage), leading to damage to cardiomyocytes;

D) an imbalance between increased metabolic needs and a decrease in heart reserve;

E) the risk of rupture of an atherosclerotic plaque due to viral inflammation;

E) the risk of thrombotic complications (for example, stent thrombosis) due to the procoagulant and prothrombogenic effects of systemic inflammation;

G) damage to microvessels due to hypoperfusion, increased vascular permeability, angiospasm, direct damaging effect of the virus on the endothelium of the coronary arteries.

It is unclear whether the risk of cardiovascular complications continues in the long term. A 12-year follow-up of patients with SARS-CoV infection showed changes in lipid metabolism compared to patients who did not have a history of this infection. Given that SARS-CoV-2 has a similar structure to SARS-CoV, this new virus can also cause metabolic disorders, which requires evaluation in the management of patients

with COVID-19. Mortality is often determined by damage to other organs (eg, the lungs). An interdisciplinary approach to the management of severe cases and long-term follow-up of recovered patients is required.

Despite all the measures taken with coronavirus, critical hemodynamic disturbances occur in patients in the cardiovascular system. Serious hemodynamic disorders in patients with COVID-19 can include:

- the result of a heart injury (first developed as a complication of COVID-19 or decompensation of chronic heart failure) (Fig. 3);

- the result of the development of a pronounced systemic inflammatory reaction (often called "cytokine storm"), which, given the infectious origin, should be classified as septic shock.

Depending on the hemodynamic profile, heart damage from COVID-19 can manifest as cardiogenic shock (PAC) or cardiogenic pulmonary edema (COL).

Severe hemodynamic disturbances are indications for hospitalization in the intensive care unit (ICU) with the mandatory carrying out of the following diagnostic procedures:

- ECG, EchoCG and chest x-ray;

- monitoring of the patient's condition - ECG, pulse oximetry, blood pressure measurement;

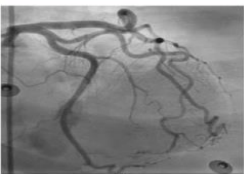
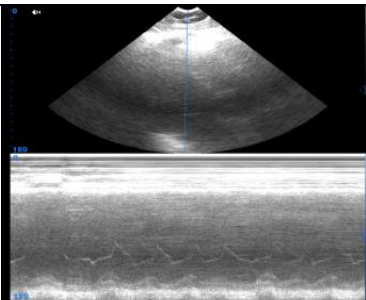
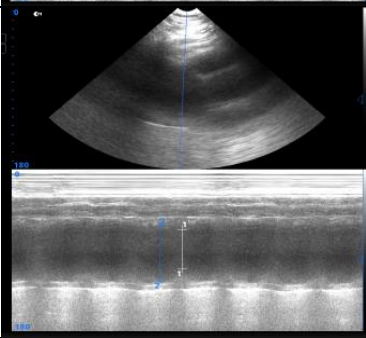
- the panel of laboratory tests should include: clinical blood test, general urine analysis, blood electrolytes (potassium, sodium), total protein and albumin, creatinine and urea, ALT, AST, total bilirubin, lactate, NT-proBNP, troponin, coagulogram (fibrinogen, APTV, PTI, INR). It is imperative to perform an analysis of the gas composition of arterial blood and blood from a catheter located in the central vein (SvO₂) with the possibility of analyzing indicators of the acid-base state (ACS).

These basic laboratory and instrumental studies will determine the cause of critical hemodynamic disorders and begin differentiated intensive therapy.

Arterial catheterization with invasive continuous blood pressure measurement

is recommended (if technically feasible and trained).

Catheterize the central vein (subclavian or jugular) and measure central venous pressure (CVP).

№	Critical violations	ECG and coronary readings	ECHOKG changes
1.	Acute coronary syndrome with ST-segment elevation and coronary syndrome without ST-segment elevation	 	
2.	Acute myocardial injury without atherosclerosis a) myocarditis b) stress cardiomyopathy	 	
3.	Arrhythmias		
4.	Heart failure		
5.	Pericardial effusion		
6.	Thromboembolic complications		

The main task for bed echocardiography in a new coronavirus infection is to assess:

1. global and regional contractile function of the LV and right ventricle (RV) (qualitatively);
2. the size of the heart chambers (dilatation of the chambers);
3. the presence of fluid in the pericardial cavity and in the pleural cavities;
4. presence of mitral regurgitation (qualitatively);
5. the presence of additional formations in the cavities and structure of the heart (blood clots);
6. volemic status (diameter of the inferior vena cava);
7. Ultrasound profile of the lungs.

High-speed and temporary parameters of the high-amplitude reflected signals of the movement will help to reveal early dysfunction of a myocardium at that stage of its development when traditional DExoKG indicators don't change yet. The high-speed indicators of the high-amplitude reflected movementsignals easily are registered by means of usual faltering wave doppler sonography in this connection the technique is available to broad diagnostic practice [23].

Damage to the tissue of the heart or lungs leads to the activation of the innate immune

response with the release of pro-inflammatory cytokines, as well as to the activation of the adaptive mechanisms of the autoimmune type. In patients with myocarditis, echocardiography is not the method of choice for diagnosing specific myocardial injury. However, on the basis of clinical and laboratory data, allowing to suspect the presence of a new coronavirus infection, the following pathological changes should be determined in a patient when performing an EchoCG study:

- regional violations of LV contractility (yes / no);
- a) regional violations of RV contractility (yes / no);
- b) decrease in the amplitude of movement of the mitral and tricuspid rings (MAPSE and TAPSE) (yes / no);
- c) LV dilatation (yes / no);
- d) RV dilatation (yes / no);
- i) significant mitral regurgitation (yes / no);
- f) significant tricuspid regurgitation (yes / no);
- j) the presence of pathological hyperechoic echoes in the cavity of the ventricles attached to areas of the myocardium with impaired regional contraction - presumably a thrombus (yes / no).



Picture 1. The figure shows small blood clots and hyperechoic overlays on the valve leaflets.



Figure 2. Hyperechoic overlays on the interventricular septum (a) and papillary muscles of the MV (b) associated with dilatation of the right ventricle and expansion of the interventricular septum, which is consistent with increased pressure in the right heart.

To study the role of respiratory viral infections in the formation of staning of the left atrium and its early diagnosis. 157 patients were examined, average age - 39.5 ± 4.8 years, men 98 people (63%), women 59 people (37%). All subjects were divided into 3 groups: 1 group — persons who had a mild form of myocarditis (n = 63); Group 2 - people who have had a complicated form of myocarditis (n = 75); Group 3 - persons who had a complicated form of myocarditis (n = 19) [22] .

We recommend a cautious attitude towards COVID-19 patients who come to the doctor for the first time with complaints of palpitations and chest tightness, taking into account the assessment of the associated respiratory symptoms (fever and cough) and the epidemiological history.

With complaints of arrhythmia, palpitations, pain and discomfort in the region of the heart, episodes of weakness and dizziness, fainting occurs.

Before starting treatment with azithromycin, chloroquine / hydroxychloroquine, lopinavir + ritonavir - estimate the duration of the QT interval, corrected by Bazett's formula (QTc), it should not exceed 480 ms; further monitoring every 5 days or when complaints appear. Daily ECG recording for severe COVID-19.

In view of the above, medical personnel should, whenever possible, print electrocardiograms from the internal monitor to minimize contamination of the equipment. It is very important for all medical personnel to wash their hands thoroughly and frequently. Standard protection methods include washing hands with warm water for at least 30 seconds, then disinfecting the hands with antiseptic solutions and wearing gloves. Additional precautions include a specialized suit, a second set of gloves, a hat, a face mask and protective eye mask, and overshoes.

The local application of each component of personal protective equipment in hospitals may vary depending on the level or type of risk. In some institutions, the practice of covering sensors and machine consoles with a special protective film with the possibility of quick replacement is adopted. It is advisable to refrain from

synchronizing ultrasound and ECG in such conditions [21].

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**HYGIENIC ASPECTS OF THE POSSIBILITY OF USING THE NEW INSECTICIDE
SELLER IN AGRICULTURE**

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✓ **Resume**

More than 4 million pesticides are used against pests worldwide, of which only 1% are effective.

The development of hygienic standards of pesticides is of particular importance in preventing the negative impact of pesticides on the human body and the environment. The resistance of Seller insecticide to soil, its movement in layers, accumulation, the degree of transition of plants to the surface, the level of air pollution in the workplace and atmospheric air in the processing of agricultural crops were assessed.

Keywords: insecticide, sanitary-toxicological, permissible concentration, migration, hygienic regulation.

**ЯНГИ СЕЛЛЕР ИНСЕКТИЦИДИНИ ҚИШЛОҚ ХЎЖАЛИГИДА ИШЛАТИЛИШИНING
ГИГИЕНИК ЖИХАТЛАРИ**

Жумаева А.А.

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✓ **Резюме**

Бутун дунё бўйича 4 миллиондан ортиқ пестицидлар зараркунандаларга қарши ишлатилмоқдаки, улардан фақатгина 1% самара бермоқда. Пестицидларнинг инсон организми ва атроф-муҳитга салбий таъсирини олдини олишда уларнинг гигиеник меъёрларини ишлаб чиқиш алоҳида аҳамият касб этади. Селлер инсектицидининг тупроқда чидамлилиги, унинг қатламларидаги ҳаракати, тўпланиши, ўсимликларнинг ер устки қисмига ўтиш даражаси, қишлоқ хўжалиги экинлари ишлов беришда ишчи ўринлари ҳавоси ва атмосфера ҳавосининг ифлосланиш даражасига баҳо берилди.

Калит сўзи: инсектицид, санитар-токсикологик, рухсат этилган концентрация, миграция, гигиеник меъёрлаш.

**ГИГИЕНИЧЕСКИЕ АСПЕКТЫ ИСПОЛЬЗОВАНИЯ НОВОГО ИНСЕКТИЦИДА
СЕЛЛЕРА В СЕЛЬСКОМ ХОЗЯЙСТВЕ**

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✓ **Резюме**

Во всем мире против вредителей используется более 4 миллионов пестицидов, из которых только 1% эффективен.

Разработка гигиенических нормативов пестицидов имеет особое значение для предотвращения негативного воздействия пестицидов на организм человека и окружающую среду. Оценивали стойкость инсекти

цида Селлера к почве, его перемещение по слоям, накопление, степень перехода растений на поверхность, уровень загрязнения атмосферного воздуха на рабочем месте и атмосферного воздуха при обработке сельскохозяйственных культур.

Ключевые слова: инсектицид, санитарно-токсикологический, допустимые концентрации, миграция, гигиеническое регулирование.

Relevance

More than 100 chemical compounds used in agriculture are known in our republic. Agriculture agenda, many of the pesticides used on the one hand xosildorli care and economic efficiency as well as a new biologically active substances into the environment which could lead to problems of environmental protection [1,2,17] .

According to the results of toxicological studies, it was found that the Seller preparation of 20% k.s. belongs to hazard class III (SanPiN RUz No. 0321-15). The insecticide has an irritating effect on the mucous membranes of the eyes and skin. The drug has functional cumulation [16].

The permissible daily dose at the level of 0.72 mg (people) per day is scientifically substantiated. Seller 20% K.s. does not have carcinogenic, mutagenic and embryotoxic effects.

Based on the complex of studies, hygienic standards of the preparation were developed and recommended: maximum concentration limit in water of reservoirs at the level of 0.04 mg / l (limiting hazard indicator is organoleptic); MPC in the air of the working area - 0.24 mg / m³; MPC in atmospheric air - 0.002 mg / m³; MDU in wheat - 0.18 mg / kg; UEC in the soil - 0.2 mg / kg sanitary protection zone (C33) - 200 meters, time for going to work after 7 days.

Thus, on the basis of the above, the insecticide Seller 20% k.s. can be recommended for use in agricultural practice, subject to the mandatory use of personal protective equipment for eyes, skin, respiratory organs and compliance with the rules for the use of the drug, recommended consumption rates and safety measures when working with pesticide [7] .

The problem of chemical plant protection products attracts increasing attention not only of working agricultural, chemical and medical sciences, but also of the general public. This is evidenced by numerous publications in world literary scientific journals and books (Melnikov N.N. 1994, Golagonov P.S. 2004, Rakhmanin Yu.A. 2013. And others. The problem of protecting public health in connection with the widespread use of pesticides worries many hygienists countries (Sarkisova A.G. 2000, Melnikov N.N. 1994., Rakhmanin Yu.A. et al. 2013).

First of all, this is a general hygiene, large-scale, complex and multifaceted problem. To protect cultivated plants from numerous pests and pathogens, as well as from weeds, a significant assortment of chemicals used to control agricultural pests is used. All these substances of the aggregate and each separately are intended for

the destruction of harmful organisms [11,15] .

Some chemicals are very persistent; they retain their toxic properties under natural conditions for a long time. Some of them have carcinogenic, mutagenic, gonadotropic and other negative effects on public health (Iskandarov T.I. et al. 2016). Therefore, the study of toxic, carcinogenic, mutagenic and other properties of pesticides is of paramount importance [4,9] .

The hygienic substantiation of the standards for the permissible content of pesticide residues in the environment, as well as the regulation of the conditions for their use, taking into account the whole variety of factors determining the duration of conservation of these chemicals in nature, are the basis of the system for the prevention of their possible adverse effects on humans (A. Labyntsev et al. ., 2010, Belan S.R. et al., 2011).

According to the sanitary legislation, not a single chemical substance can be approved for use in the national economy without a deep toxicological and hygienic assessment (Law of the Republic of Uzbekistan on the sanitary and epidemiological well-being of the population-2015).

Among pesticides used in agriculture, insecticides occupy a special place. Of these, synthetic pretroids are widely recognized for the most part, relatively low toxicity for warm-blooded organisms with a single exposure, but are highly resistant to the environment (Goldstein N.I. 2001).

The latter feature determines the possibility of their migration in soil, food products moving in ecological and food chains, the final link of which is man.

In this regard, and also considering that certain groups of this class are characterized by embryotoxicity, mutagenicity, and other manifestations of biological activity (Iskandarov T.I.-2016, Teyvan R.Ya.-2002). The introduction of pesticides of derivatives of synthetic pretroids into agricultural practice should be accompanied by a comprehensive study of them and strict regulation [6,12,14] .

The high insecticidal and economic effectiveness of plant protection chemicals stimulates the search for new pesticides of the class of synthetic pretroids [10] .

As a result of such searches, a new, promising insecticide "Seller 20% cop" was created. To solve the question of the possibility of using it in areas designated for food crops and developing appropriate preventive regulations, there was a need for toxicological and hygienic assessment of this drug, which is included in the plan of the

coordination Council of the Ministry of Health of the Republic of Uzbekistan (protocol No. 2 of February 20, 2019)

Purpose of the study

Our goal is to assess the danger to Seller of 20% k.s. for humans and to develop, taking into account the specific features of agriculture in Central Asia, regulations guaranteeing safety in the environment and for consumers of agricultural products in hot climates.

The objectives of the study

1. To determine the main parameters of Seller toxicity of 20% k.s. for warm-blooded animals with single and multiple administration, necessary for the development of hygiene regulations, to study the nature and features of the action on individual organs and systems.

2. Give a comparative description of the studied insecticides and synthetic drugs already used, taking into account their chemical structure and biological activity, determining the location of the insecticide Seller 20% K.s. in a row of insecticides.

3. Develop hygiene regulations that ensure safety for the environment and humans [5,8].

The scientific novelty of the work lies in the fact that for the first time a multifaceted study was conducted on the toxicological and hygienic assessment of a new, promising insecticide - Seller 20% c.s. and a set of hygienic regulations have been developed that ensure its safe use in agriculture, taking into account factors characteristic of soil and climate conditions of Uzbekistan and other Central Asian Republics (soil type, irrigation conditions, etc.).

The practical significance of the work

1. The maximum permissible concentration (MPC) of the drug in the atmospheric air, air of the working area and in the water of water bodies has been developed

2. Justified: approximate safe concentration (UEC) of Seller 20% c.s. in the soil, the maximum allowable level (MRL) in food products;

3. Identified characteristic changes in the functional state of individual body systems arising under the influence of Seller 20%, which can be used to develop methods for the diagnosis and treatment of poisoning with this drug.

4. Methodological recommendations will be drawn up on the use of the seller's insecticide 20% k.s. on special soils of the Republic of Uzbekistan and identical conditions of the Central Asian republics.

The theoretical significance of the work lies in the fact that some aspects of the pathogenesis of

the toxic effect of Seller 20% on the organism of warm-blooded animals are established. The regularities of the behavior of the insecticide in the soil and climatic conditions of Uzbekistan have been identified, which should be taken into account when hygienically regulating the conditions for its use.

Material and methods

The object of the study was the insecticide Seller 20% K.s. productions of LLC Euro-Team, Uzbekistan-Germany. The name of the active substance is alpha-cyano-3-phenoxytenzyl (2,2-dichlorovinyl) -2,2-dimethylcyclopropane-carboxylate. Chemical class - synthetic drugs, purpose - insecticide [3].

Scope - on wheat against harmful turtles, leeches.

Seller 20% c.p. - non-systemic insecticide of contact and abdominal action with a pronounced residual effect on the treated plants. - non-systemic insecticide of contact and abdominal action with a pronounced residual effect on the treated plants.

The preparative form of the drug. The state of aggregation is a suspension concentrate, white (light cream) in color with a faint chemical smell. The drug is not volatile, not explosive, does not have corrosive properties.

The toxic effects of Seller 20% xs were studied in sexually mature animals of both sexes (white mice and chris) rabbits. Previously aged in laboratory mode, when introduced into the stomach in the form of an aqueous emulsion by a probe under the conditions of acute, subacute and chronic experiments. At the same time, the skin-irritating and allergenic effects of the drug in white rats were studied by applying to clipped skin, introducing the native drug into the conjunctival sac. When studying the toxic effect and degree of Seller toxicity, 20% of cc took into account the following indicators: animal survival, behavior, general condition, body weight, time about symptoms of intoxication and animal death.

Thus, the study of the toxicity of the drug was carried out according to the methodological manual "Methodology of integrated and accelerated rationing of pesticides in environmental objects." Approved by the Ministry of Health of the Republic of Uzbekistan on April 10, 2014 for No. 8N-P / 193 [13]

The toxicity parameters of the drug (Own research)

The study of acute toxicity of the drug was carried out in laboratory animals - rats. Rats of both sexes were taken into the experiment, to which the drug was administered in doses of 50.0 -

500.0 mg / kg. As a result of the studies, an average - lethal dose was established at the level of 300.0 (204.0 ± 395.0) mg / kg body weight, LD16 - 120.0 mg / kg; LD84 - 440.0 mg / kg (tab. 1). The poisoning clinic manifested itself as follows: the animals became lethargic, nasal discharge,

increased salivation, shortness of breath, animals took a lateral position, after which clonic convulsions were noted.

Table 1. Calculation Establishment of Acute Acute Toxicity Parameters

Dose mg / kgXэ	Mortality, % Yx	Dose location, X	Pierced Y	Weights Coef r B	X B	X2B	YB	XY
50,0	0	0,5	3,27	1,6	0,8	0,4	5,23	2,9
100,0	16,6	1	4,01	3,5	3,5	3,5	14,04	14,04
200,0	33,3	2	4,56	4,5	9,0	18,0	20,52	41,0
300,0	50	3	5,0	5,0	15,0	45,0	25,0	75,0
400,0	66,6	4	5,41	4,6	18,4	73,6	24,89	99,3
500,0	100	5	6,73	1,6	8,0	40,0	10,77	53,3
		Σ		20,8	54,7	180,5	100,45	286,3

Thus, according to the parameters of acute toxicity, the drug belongs to hazard class III, according to SanPiN RUz No. 0321-15 "Hygienic classification of pesticides by toxicity and hazard".

Irritating effect of the drug EYES.

The experiment was performed on white rats. The drug was introduced in the native form into the conjunctival sac of the animal's eye in an amount of 2-3 drops, the second eye served as a control. 1 hour after application, redness and lacrimation were observed in the experimental eye of the animal. 4 hours after application, slight suppurative, blepharospasm was noted. On the 3rd day, the observed signs of irritation (conjunctivitis) tended to decrease and disappeared on the 4th - 5th day of the experiment. Based on the studies, we can conclude that the drug has an irritating effect on the mucous membranes of the eyes.

LEATHER. The experiment was carried out on experimental animals - white rats. The preparation was applied to the clipped skin in the native form, after a 4-hour exposure, the preparation was washed off and observations were made of the experimental skin areas. Immediately after application, redness, swelling, and single cracks were observed in the test areas. Observed signs of irritation were noted for 3-4 days; by day 5 of the experiment, there were no signs of irritation.

Thus, the drug has an irritating effect on the skin.

The study of the cumulative properties of the drug Seller 20% K.s.

The cumulative properties of the drug were studied under the conditions of a subchronic (4 month) experiment on white rats, which were divided into 2 groups. The first group received the drug at a dose of 1/10 LD50 (30 mg / kg). The second group served as control. Due to the absence of animal death, the cumulation coefficient was not possible to calculate. However, according to the

manifestation of some signs of intoxication (agitation after drug administration), it can be concluded that the drug has weak functional cumulation.

The study of chronic toxicity of the Seller 20% K.s.

The study of the chronic toxicity of the drug using mathematical modeling made it possible to establish the threshold and inactive dose at the levels of 3.0 and 0.6 mg / kg, respectively. The allowable daily dose of the drug is calculated and scientifically substantiated at the level of 0.72 mg / person / day.

The long-term effects of the drug were studied during a two-year experiment in rats. The experimental animals were divided into 5 groups

I gr control

II g was administered 1 mg / kg of the drug

III gr was administered 10 mg / kg of the drug

IV g was administered 100 mg / kg of the drug

V gr was administered 1000 mg / kg of the drug

When experimenting for 2 years, a carcinogenic effect of the drug was not detected. The number of neoplasms in the experimental groups of animals did not exceed the spontaneous level of control. Signs of thermotogenicity, embryo toxicity, and mutagenicity were also not observed.

Thus, the insecticide Seller 20% K.s. It has no carcinogenic, teratogenic, embryo toxic and mutagenic effects.

Justification of the MPC of the drug in water bodies of water

In order to establish the MPC of the drug in the water of reservoirs, studies were conducted to study the effect of the drug on the organoleptic properties of water and the sanitary regime of water in reservoirs. According to the effect on the organoleptic properties of water (odor), a threshold concentration of 0.04 mg / L has been established. The drug in this concentration did not have

foaming, did not change the color of the water. Given the results of the sanitary - toxicological experiment, a threshold concentration of 0.72 mg / l has been established.

The complex of studies, taking into account the data of the sanitary-toxicological experiment, allowed us to recommend the maximum concentration limit of the drug in the water of reservoirs at the level of 0.04 mg / l, the limiting sign of harmfulness is organoleptic.

Justification of the MDA of the drug in food

Based on the data on the stability of the drug, toxicometric parameters, guided by the generally accepted hygienic approaches to rationing pesticides in food products, the recommended MDA of the drug is: in wheat - 0.18 mg / kg. However, taking into account the minimum consumption rates of the preparation - 0.05 l / ha, there should be no residual quantities of the preparation in wheat.

The rationale for the MPC of the drug is 20% C.s. in atmospheric air and air of a working zone

Based on methodological approaches to the regulation of harmful substances in air (2014 methodology, SanPiN of the Republic of Uzbekistan No. 0293-11), taking into account toxicological parameters and its physicochemical properties, the maximum concentration limit of the drug in atmospheric air at a level of 0.002 mg was substantiated and recommended. / m³, in the air of the working area - 0.24 mg / m³.

Justification of the approximate permissible concentration (UEC) of the Seller's drug 20% k.s. in the soil

When calculating the approximate permissible concentration (OEC) of the drug in the soil, we

were guided by the methodological manual "Methods of integrated and accelerated rationing of pesticides in environmental objects -2014"

The calculation was based on MDU data of the drug in plant foods. Recommended ODK of the drug in the soil at the level of 0.2 mg / kg.

Conclusions

Based on the conducted experimental studies and expert examination of the documentation provided by the company, it was found:

Seller 20% c.p. - non-systemic insecticide of contact and abdominal action with a pronounced residual effect on the treated plants. The drug exhibits an action against eating. Scope - on wheat against harmful turtles, leeches. Insecticide affects the intestinal tract and nervous system of insects. The action appears immediately after treatment within the first hour. The protective period is one full season. Spraying - during the growing season. The term of the last processing before harvesting is 15 days.

According to the parameters of acute toxicity, the drug belongs to hazard class III (SanPiN RUz No. 0321-15). A study of the effect of the drug on the mucous membranes of the eyes of experimental animals made it possible to establish that the drug has an irritating effect on the mucous membranes of the eyes and skin.

A study of the cumulative properties of the drug made it possible to establish that the drug has poorly functional cumulation.

The permissible daily dose at the level of 0.72 mg / person / day is scientifically substantiated. The insecticide Seller 20% K.s. does not have carcinogenic, mutagenic, embryotoxic effects.

2 Table

Hygienic parameters of seller insecticide

Indicator	Defined and permissible norm
Atmospheric air mg / m ³	0.002
Workplace air mg / m ³	0.24
Water basins mg / l	0.04
In the soil, mg / m ³	0.2
Food - mg / kg	Not allowed

Findings

Based on the conducted experimental studies and expert examination of the documentation provided by the company, it was found:

Seller 20% c.p. - non-systemic insecticide of contact and abdominal action with a pronounced residual effect on the treated plants. The drug exhibits an action against eating. Scope - on wheat against harmful turtles, leeches. Insecticide affects the intestinal tract and nervous system of insects. The action appears immediately after treatment

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has an irritating effect on the mucous membranes of the eyes and skin.

A study of the cumulative properties of the drug made it possible to establish that the drug has poorly functional cumulation.

The permissible daily dose at the level of 0.72 mg / person / day is scientifically substantiated. The insecticide Seller 20% K.s. does not have carcinogenic, mutagenic, embryotoxic effects.

Based on the complex of studies, hygiene standards of Seller were developed and recommended 20% k.s: MPC in the water of reservoirs at the level of 0.04 mg / l (the limiting sign of harmfulness is organoleptic); MPC in the air of the working area - 0.24 mg / m³; MPC in atmospheric air - 0.002 mg / m³; MDU in wheat - should not be; ODK in the soil - 0.2 mg / kg.

Sanitary protection zone (SPZ) - 200 meters; deadlines for work - 7 days.

Thus, based on the foregoing, the insecticide Seller 20% K.s. can be recommended for use in agricultural practice subject to the mandatory use of personal protective equipment for eyes, skin, respiratory organs (irritates the eyes and skin) and compliance with the rules for the use of the drug, recommended consumption rates and safety measures when working with pesticides.

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GENETIC CHARACTERISTICS OF PHYSICAL PERFORMANCE OF ROWING ATHLETES

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✓ *Resume*

This scientific paper presents the genetic characteristics of physical performance, allelic-genotypic variants of some sports genes, and their associations in rowing athletes.

Keywords: *Genotype, Allele, Gene polymorphism, Allele-genotype variant, Sports genes, Rowing athletes.*

ЭШКАК ЭШУВЧИ СПОРТЧИЛАРНИНГ ЖИСМОНИЙ ИШ ҚОБИЛИЯТИНИНГ ГЕНЕТИК ХУСУСИЯТЛАРИ

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✓ *Резюме*

Ушбу илмий ишда эшкак эшувчи спортчиларнинг жисмоний иш қобилиятининг генетик хусусиятлари, ҳамда баъзи спорт генларининг аллел-генотипик вариантларининг хусусиятлари, ҳамда уларнинг ассоциациясининг ўрганиш натижалари келтирилган.

Калит сўзлар: *генотип, аллел, генлар полиморфизми, аллел-генотип вариант, спорт генлари, эшкак эшувчи спортчилар.*

ГЕНЕТИЧЕСКИЕ ХАРАКТЕРИСТИКИ ФИЗИЧЕСКИХ РАБОТОСПОСОБНОСТИ ГРЕБНЫХ СПОРТСМЕНОВ

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✓ *Резюме*

В данной статье приведены результаты изучения генетических особенностей физической работоспособности спортсменов, аллельно-генотипные варианты некоторых спортивных генов и их ассоциации у спортсменов гребцов.

Ключевые слова: *генотип, аллель, полиморфизм генов, аллельно-генотипный вариант, спортивные гены, спортсмены - гребцы.*

Relevance

It is known that sports results are primarily determined by the degree of expression in an athlete, such qualities as endurance, speed, strength, coordination, flexibility, as well as their combination [1]. Success in every sport requires different athletic qualities. So, if sprinter-runners need high-speed qualities, then marathon runners - long-distance runners - need endurance, so on [10]. Only under the conditions of an optimal combination of these qualities, which are genetically determined, and creating a good training process, taking into account these qualities, it is possible to achieve good sports results [3].

It is well known that any physical activity requires active muscular work. This is associated with energy consumption formed during the oxidation of the primary energy substrates - carbohydrates, fats and proteins. Specific genes also control Simulta, the metabolism of these substrates. It is known that the genes of proliferator-activated peroxisomes (PAPs), belonging to the family of nuclear receptors, are involved in the formation of proteins that can specifically bind to PAP-sensitive elements of promoters of genes for fat and carbohydrate metabolism and regulate their transcription [1]. These genes expressed in those tissues where

increased fat catabolism occurs, particularly in slow muscle fibres, liver, heart and brown adipose tissue. According to O. Braissant et al., the PAP gene is expressed in muscles 7 times more than in adipose tissue [11]. The primary purpose of the PPAR α protein is to regulate lipid metabolism, glucose and energy homeostasis, body weight and inflammation by controlling the expression of genes involved in peroxisomal and mitochondrial oxidation, fatty acid transport, lipoprotein synthesis, triglyceride catabolism, and metabolism of inflammatory factors [19]. Fatty acids (FA) are primary energy substrates and are of great importance during physical activity. Under conditions of aerobic physical activity, the expression of the PAP gene and the cascade of genes subordinate to them increases. The utilization of FAs increases, which ultimately leads to an increase in the oxidative potential of skeletal muscles [17]. Under conditions of low expression of the PAP gene, the intensity of β -oxidation of FAs decreases and tissue metabolism switches to the glycolytic method of obtaining energy, and, conversely, in conditions of over-increased expression of this gene, a significant decrease in carbohydrate utilization and intensification of FA oxidation occurs [13]. Consequently, these genes, controlling the process of energy production in the cells and tissues of the body, indirectly affect muscle activity and, ultimately, the performance of a person as a whole.

Therefore, the study of gene polymorphism directly or indirectly affecting athletic qualities is one of the priority areas in sports medicine and genetics. Among the candidate genes responsible for the body's endurance to physical activity are genes for the angiotensin-converting enzyme - ACE [24] and PAP [2,3,4,7,10].

We studied the frequency of distribution of allelic-genotypic variants of the ACE and PPAR genes in this work.

The purpose of the research. The study consisted of studying the distribution of the allele frequencies of the ACE and PPAR genes and their associations in rowers. We studied the frequency of distribution of allelic-genotypic variants of the ACE and PPAR genes in this work.

Materials and methods

The studies were conducted based on a sample of athletes in 2018. The number of athletes was 20, at the age of 17-30. When selecting specific individuals, their nationality was not taken into account. The collection of biological material for DNA extraction was carried out, taking into account the established procedure for human rights, which was carried out with the written consent of the subjects [6].

The collection of blood samples from athletes was carried out based on the sports federation of Uzbekistan. Venous blood in an amount of 1.5ml was collected in 3ml of EDTA (ethylenediaminetetraacetic acid) solution and stored at -20°C.

Isolation of DNA from whole blood was carried out using a Ribot-prep reagent kit (manufactured by Interlabservice, Russia).

Detection of polymorphism of the studied genes was determined by the Real-Time PCR method (the kit was manufactured by OOO NPF Litekh, Moscow, Russia). GeneAmp® PCR - ABI 7500 Fast Real-Time PCR with a 96-well block was used for real-time PCR amplification. The real-time amplification program included 100 sec of preliminary denaturation at 95 ° C once, at 95 ° C for 15 sec, and at 64 ° C for 40 sec included 45 repetitions. The FAM and JOE detectors were introduced into the program. The results obtained were documented in the form of the growth of curves for two detectors FAM and JOE, in a graphical model using the appropriate program (Figures 1, 2).

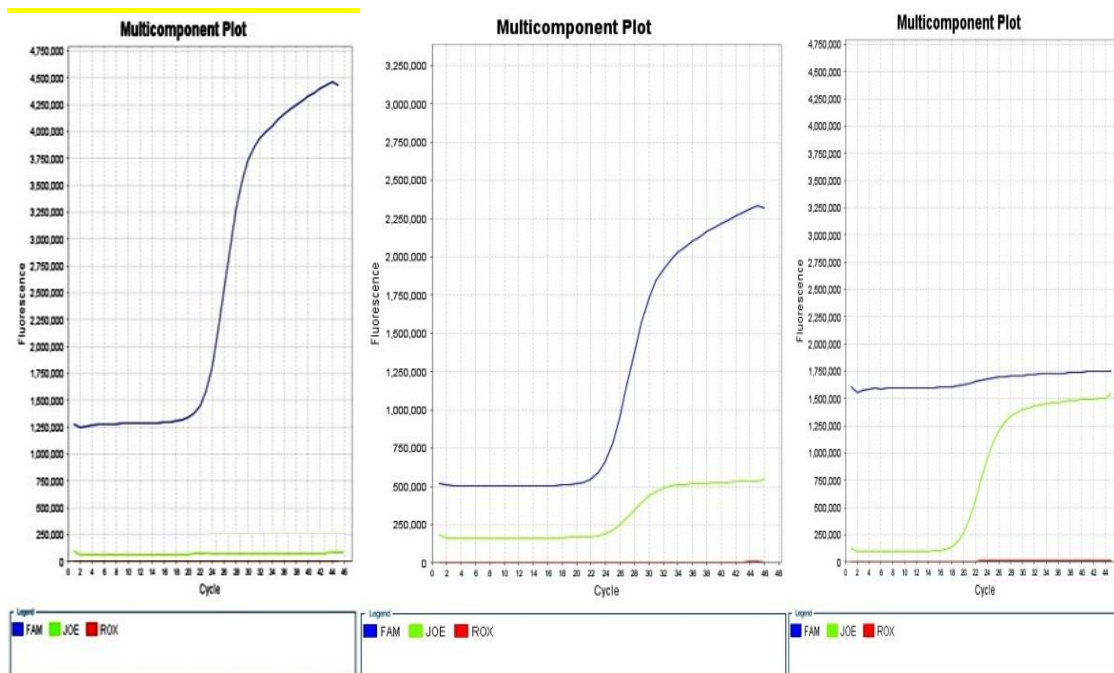


Figure 1. Result of real-time PCR of the ACE Ins / Del gene: A - homozygous Ins / Ins genotype; B - heterozygous genotype - Ins / Del and B-homozygous Del / Del genotype.

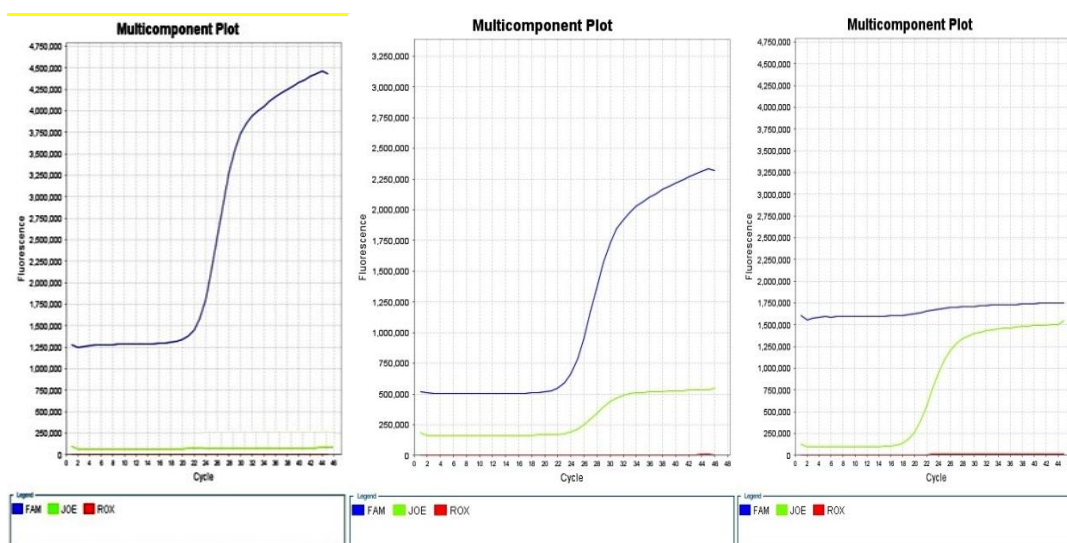


Figure 2. The result of real-time PCR of the PPARA gene: A - homozygous genotype G / G; B - heterozygous genotype - G / C and B-homozygous genotype C / C.

Results and discussion

The analysis results of the distribution frequencies of allelic-genotypic variants of the ACE gene in rowers are presented in Fig. 3. As can be seen from the presented data, among the surveyed rowers' athletes, carriers of the Ins / Ins genotype were 35.0%, and the Ins / Del genotype - 50.0%. Simultaneously, among them, the proportion of carriers of the Del / Del genotype of the ACE gene was only 15.0%. Consequently, the study results indicate the association of the ACE polymorphism with a predisposition to

sports, distributed as follows: the Ins allele, which is responsible for endurance, prevails in the examined athletes compared to the Del allele, which is responsible for strength and speed. However, the most common among athletes of this sport is the heterozygous Ins / Del genotype. It is known that the ACE gene in the body controls the production of the angiotensin-converting enzyme, ACE, which catalyzes the conversion of angiotensin I to angiotensin II, and also participates in the inactivation of the vasodilating factor, bradykinin, to inactive

metabolites [16]. The influence of this gene on human physical activity is mediated through the components of the renin-angiotensin and kallikrein-kinin systems. The predisposition of people to sports-related endurance and resistance to hypoxia is associated with the Ins allele of the ACE gene. So, according to S. Myerson et al. [27], the prevalence of the Ins allele of the ACE gene in comparison with the control group was revealed in British distance runners - in long-distance runners. Studies by H.E. Montgomery et al. [25] show similar results in elite climbers.

Similar data were obtained by several researchers from Russian athletes specializing in

middle distances [8], Australian [32], Croatian [24], Russian rowers-academics and other athletes, distance runners, marathon runners [1]. The results of our research also show that carriers of the Ins allele of the ACE gene are quite common among rowing athletes. The increased endurance associated with the carriage of the Ins / Ins genotype of the ACE gene is due to the high mechanical efficiency of skeletal muscles [28]. B. Zhang et al. [33] showed the ACE Ins / Ins genotype association with the predominance of slow muscle fibres in the quadriceps femoris muscle.

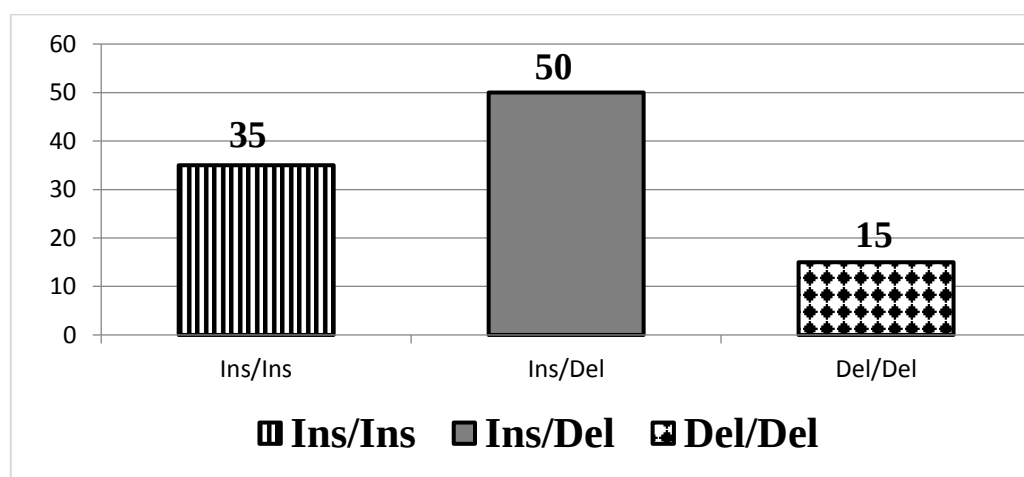


Fig. 3. Distribution of ACE gene genotypes among athletes rowers (in%).

It was found that insertion-deletion polymorphism was revealed in the ACE gene, in which the presence of the ACE Del allele is associated with a relatively high content of circulating angiotensin-converting enzyme and a higher activity of its tissue component [10]. A.G. Williams et al. [31] established a positive correlation between the circulating angiotensin-converting enzyme and the strength parameters of the quadriceps femoris muscle in the subjects. According to Y. Liu et al. [22], this effect is due to ACE-mediated activation of the growth factor angiotensin II. At the same time, L.J. Murphey et al. [26] consider the increased degradation of bradykinin to be significant in this case. Therefore, unlike the ACE Ins allele, the carriage of the ACE Del allele provides the athlete's strength and speed qualities. Indeed, many studies have shown a significant increase in the strength indices of the hip extensors [30], flexors of the shoulder [24], as well as pronounced hypertrophy of the biceps and left ventricular myocardium [16] in athletes with ACE Del allele as a result of training aimed at improving strength and endurance. Analysis of

our results indicates a relatively lower proportion of carriers of this allele-genotypic variant of the ACE gene among the surveyed rowers.

Consequently, the athletes of the surveyed cohort are more predisposed to the distance requiring the predominance of endurance. If the ACE Del allele is associated with an increase in dynamic strength and muscle mass, then the ACE Ins allele is associated with an increase in isometric strength [24]. It should be taken into account that, despite the associations of the ACE Del allele and the ACE Del / Del genotype with the development of speed, strength and muscle mass, this allele-genotypic variant of the ACE gene is associated with the risk of myocardial infarction, arterial hypertension, hypertrophic cardiomyopathy, obesity. Kidney disease and vascular complications, type 2 diabetes mellitus [1]. Therefore, when developing individual training programs for athletes, these circumstances should be taken into account.

The analysis results of the frequencies of the distribution of allelic-genotypic variants of the

studied polymorphisms of another gene, particularly G2528C (rs4253778) of the PAP gene polymorphism, are presented in Fig. 4A. As can be seen from the data presented, among the surveyed athletes, carriers of the G / G

genotype were 65.0% and the G / C genotype carriers - 35.0%. At the same time, carriers of the C / C genotype of the PAP gene were absent among them.

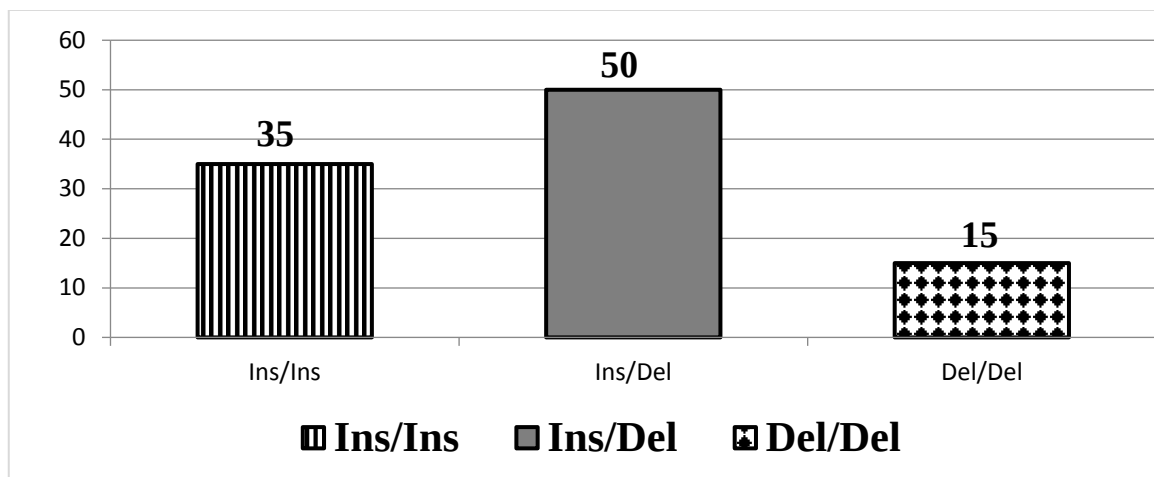


Fig. 3. Distribution of ACE gene genotypes among athletes rowers (in%).

Consequently, the study results indicate that according to the polymorphism G2528C (rs4253778) of the PAP gene, the genotypes among athletes of rowers are distributed as follows: the C allele and the C / C genotype

prevail even in comparison with the heterozygous G / C genotype. Moreover, the genotype G / G did not occur among the surveyed rowers (Fig. 4A).

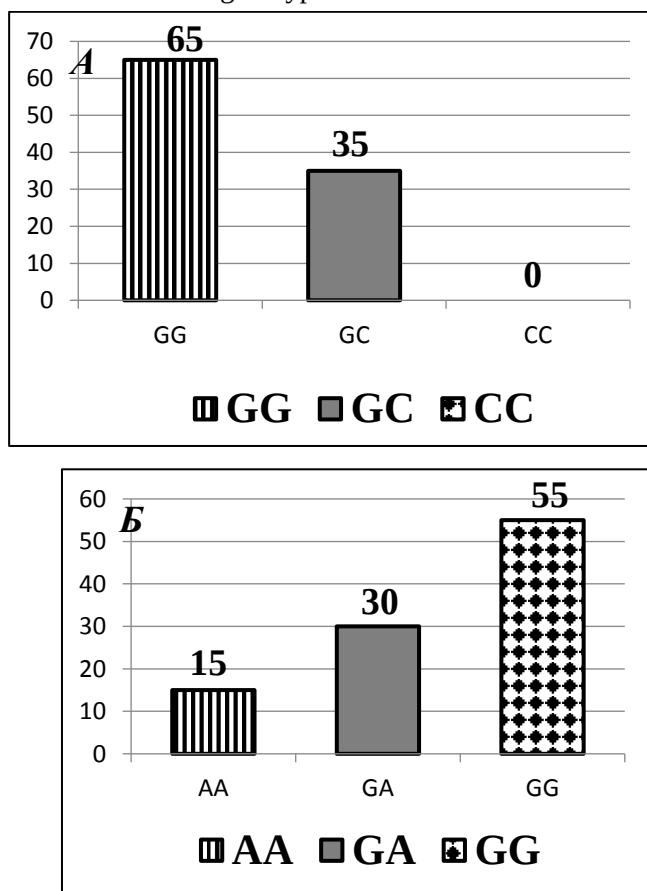


Fig. 4. Distribution of genotypes G2528C (rs4253778) (A) and G> A (GLY482SER) (rs8192678) (B) of the PPAR gene among rowers (in%).

As stated above, the G allele of the PAP gene is associated with the predominance of slow muscle fibres, high muscle endurance and the ratio of BMD (maximum oxygen consumption) to heart rate, as well as with a low risk of obesity [2, 5, 7, 10].

Consequently, in most of the athletes we examined, endurance is genetically determined. It can be assumed that these athletes can perform better in long-distance athletic performance. Indeed, a study conducted by N. Eynon et al. [12] showed in Israeli athletes that the frequency of the GG genotype of the PAP gene among long-distance runners was higher compared to sprinters. At the same time, it is impossible to consider the final forecast that most examined athletes can show the best results at long distances. As mentioned above, transcription factors regulate the expression of several dozen genes from the PAP family, increasing the activity of some and suppressing others. In this regard, it is required to assess their activity (their methylation) - the epigenetic status of an athlete [9]. This would make it possible to predict his sports results in varying degrees of accuracy in an athlete carrying specific alleles of sports genes.

The results of the conducted studies indicate that the frequency of heterozygous genotypes of the studied polymorphisms of the PAP gene is also noticeable. Research conducted by D.M. Flavell et al. [14, 15] suggests that the replacement of nucleotide G by C at position 2528 of the PAP gene is accompanied by a decrease in gene expression and causes dysregulation of lipid and carbohydrate metabolism. Moreover, the study of the carriage of this genotype among patients and healthy people shows that carriers of the C allele PAP have a relatively high risk of developing atherosclerosis, type 2 diabetes mellitus, and coronary heart disease [14, 15]. At the same time, a study conducted by Y. Jamshidi et al. [18] indicates that in carriers of the G / C genotype, the increase in left ventricular mass is 2 times, and in carriers of the C / C genotype, 3 times more than in carriers of the G / G genotype. Therefore, if we take into account that myocardial hypertrophy is due to a decrease in the expression of the PAP gene and a decrease in FA oxidation, the hypertrophic effect of the C allele is likely associated with a decrease in the absorption of FA by the myocardium and an increase in the use of glucose for its energy needs.

Analysis of the distribution frequencies of the allele-genotypic variant G> A

(GLY482SER) (rs8192678) of the PAPGC1A gene polymorphism, as can be seen from Figure 4B, shows that the A allele and the A / A genotype of the GLY482 PAP gene occurred in 15% of the surveyed rowers. Simultaneously, the G allele and the G / G genotype of the studied polymorphism of the PAP gene among athletes of rowers were 2 times more common than the A allele and A / A genotype. As for the heterozygous G / A genotype, this genotype was found in almost every second athlete. According to B.N.Finck and D.P. Kelly, [13] the PAPGC1A gene is expressed predominantly in slow muscle fibres of skeletal muscles, myocardium, brown fat, kidneys and, to a lesser extent, in the liver, pancreas, and brain. The expression of this gene is regulated by proteins of various signalling pathways, such as CAMKIV, CREB, AMPK, p38 MAPK, calcineurin A, EBox binding proteins, GATA, MEF2, NF-κB, NRs, NRF-1, FOXO1, p53, SRE. It can be supported by its expression product and nitric oxide [1]. It should be noted that the PAPGC1A gene, along with PAP, is involved in the switch of metabolism in the myocardium from carbohydrate to fat metabolism immediately after birth. It should also be noted that the increased expression of this gene, as shown by the results of the study by J.J. Lehman et al. [20], can lead to uncontrolled proliferation of mitochondria in cardiomyocytes and disruption of the sarcomeric structure in them with the development of cardiomyopathy.

Among the detected variations in the PAPGC1A gene, the Gly482Ser polymorphism, consisting of the G nucleotide replacement by A at position 1444 of the 8th exon, is of great importance. According to C. Ling et al. [21], the 482Ser allele of the PAPGC1A gene is associated with decreased oxidative processes and mitochondrial biogenesis in cells to a decrease in the expression level of this gene. Indeed, in highly qualified Spanish athletes involved in endurance sports, the Gly482 allele of the PAPGC1A gene was found to be associated with high BMD and high physical performance; the frequency of the other 482Ser allele in these athletes was significantly lower than in the control group [23]. The role of the 482Ser allele of the PAPGC1A gene in suppressing the development and manifestation of endurance is evidenced by the results of studies by N. Stefan et al. [29], that carriers of the PAPGC1A 482Ser allele show a low increase in aerobic performance compared with homozygotes for the Gly482 allele against the

background of training aimed at developing endurance.

Consequently, our results indicate that there is a rather high proportion of those whose muscle endurance due to the intensification of fat oxidation is of priority importance among the studied athletes. Although, at the same time, many athletes may have strength qualities. However, their specific gravity is noticeably

less than that of athletes with potential endurance.

We also analyzed the association of allelic-genotypic variants of the genes studied in rowers and their genetic affiliation to one or another motor activity. The results of this analysis are presented in Table 1.

Table 1

Distribution of genotypes of the studied genes and their associations among the examined athletes

№	Genes responsible for athletic performance						Character associations of genotypes
	ACE (rs4646994) _Alu_Ins/Del	Sport activities	PAP (rs4253778) G2528C	Sport activities	PAPGC1A (rs8192678) Gly482Ser	Sport activities	
1	Ins/Del	±	G/G	+	A/A	-	+
2	Ins/Ins	+	G/G	+	G/A	±	++
3	Ins/Ins	+	G/G	+	G/G	+	+++
4	Ins/Ins	+	G/C	±	G/G	+	++
5	Ins/Del	±	G/G	+	G/A	±	+
6	Ins/Del	±	G/G	+	G/A	±	+
7	Ins/Ins	+	G/C	±	G/A	±	+
8	Ins/Del	±	G/C	±	G/A	±	± ± ±
9	Ins/Ins	+	G/G	+	G/A	±	++
10	Del/Del	-	G/G	+	G/A	±	-+
11	Ins/Del	±	G/G	+	G/G	+	++
12	Ins/Ins	+	G/G	+	G/G	+	+++
13	Ins/Ins	+	G/C	±	G/A	±	+
14	Ins/Del	±	G/G	+	G/A	±	+
15	Ins/Del	±	G/G	+	G/G	+	++
16	Ins/Del	±	G/G	+	A/A	-	+-
17	Ins/Del	±	G/C	±	G/A	±	± ± ±
18	Ins/Del	±	G/C	±	A/A	-	-
19	Del/Del	-	G/C	±	G/G	+	-+
20	Del/Del	-	G/G	+	G/A	±	-+

Note: + - genotypes responsible for endurance; - - genotypes responsible for speed and strength; ± - heterozygous genotypes

As can be seen from the data presented in Table 1, among the surveyed rowers, the association of genotypes responsible for the endurance of the three studied genes occurs only in 10%, two genes - in 25%, one gene in 30% of athletes, respectively. Simultaneously, the carriage of the genotype of speed and strength took place in 5% of athletes, only to one studied gene. Furthermore, 20% of athletes had a combination of genotypes responsible for endurance, speed, and strength (mixed genotype).

Consequently, 1/3 of the rowers' athletes have a pronounced or predominance of endurance

properties. Moreover, the rest have either moderately expressed endurance or a combination of endurance with strength and speed. Thus, the results of the conducted studies indicate that among the athletes involved in the studied sports, there is a relatively high proportion of carriers of the Ins / Ins genotype of the ACE gene, as well as the G / G genotype of both the G2528C (rs4253778) polymorphism of the PAP gene and the GLY482 polymorphism of the PAPGC1A gene. Consequently, there is a rather high frequency of athletes in whom muscle endurance and FA utilization are genetically

determined among rowers. Simultaneously, among the surveyed athletes, there is a carriage of the association of allelic-genotypic variants of the studied genes in various combinations, making it difficult to conclude the predominance of one or the qualities of another sport. Our data in this regard indicate the advisability of choosing a rowing distance considering the association of genotypes of the genes we studied. So, in athletes with the carriage of the endurance genotype of three genes for longer distances, the carriage of the endurance genotype of two genes - medium distances and the carriage of the endurance genotype of one gene or the carriage of a mixed variant - short distances, respectively. Indeed, I.I. [1] shows that for rowing and canoeing in short distances (200 m), the most demanded are speed and strength. Instantaneously, rowing and canoeing at distances of 500 and 1000 m (medium distances) require speed endurance. And for rowing athletes - endurance and speed. Proceeding from this, it is essential to correctly determine rowers' specialization in this sport, considering the individual genetic predisposition to particular motor activity. In this regard, the data obtained by us are a kind of help in assessing the physical capabilities and prospects for the success of the sport of athletes in the studied sport. Moreover, this indicates the need to consider the obtained genetic determinants when planning and forming individual training programs in the pre-competition stages of their preparation.

Conclusion

1. Among the surveyed rowers, the alleles of endurance predisposition are represented by the Ins allele of the ACE gene and the G allele of the PAPGC1A gene, and the predisposition to speed and strength - by the C allele of the PAPRA gene and the A allele of the PAPGC1A gene.

2. Among athletes rowers, the highest proportion of carriers of Ins / Ins genotype of ACE gene, G / G genotype of PPARA gene and G / G genotype of PAPGC1A gene.

3. When an athlete chooses a type of rowing sport and distance, it was necessary to consider the carriage of allelic-genotypic variants of the ACE, PAP and PAPGC1A genes.

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✓ **Resume**

The patient's quality of life largely depends on the degree of restoration of the lost functions. In turn, the degree of their recovery depends on the timing of the beginning, dosage and continuity of the started rehabilitation measures. Statistical data continue to indicate that cerebrovascular diseases remain one of the most important medical and social problems of modern society. Rehabilitation of cerebral stroke, despite effective diagnosis and quality treatment, is not always effective enough, partly due to the fact that the patient rehabilitation system in our country is not sufficiently developed. At the same time, over the past decade, developments based on the use of digital technologies, computerized systems and robotic devices have been added to the traditional methods of rehabilitation. The review presents modern concepts of rehabilitation of patients with cerebral ischemic stroke. The issues of medical, labor and social rehabilitation are highlighted. Particular attention is paid to non-drug methods of treatment based on biofeedback using computer technology.

Key words: *rehabilitation, rhythmic stimulation, neuropathic pain cerebral, dosage measures*

РЕАБИЛИТАЦИЯ ПАЦИЕНТОВ ПОСЛЕ ЦЕРЕБРАЛЬНОГО ИНСУЛЬТА

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✓ **Резюме**

Качество жизни пациента во многом зависит от степени восстановления утраченных функций. В свою очередь, степень их выздоровления зависит от сроков начала, дозировки и продолжительности начатых реабилитационных мероприятий. Статистические данные продолжают указывать на то, что cerebrovascularные заболевания остаются одной из важнейших медико-социальных проблем современного общества. Реабилитация церебрального инсульта, несмотря на эффективную диагностику и качественное лечение, не всегда бывает достаточно эффективной, отчасти из-за того, что система реабилитации пациентов в нашей стране недостаточно развита. При этом за последнее десятилетие к традиционным методам реабилитации добавились разработки, основанные на использовании цифровых технологий, компьютеризированных систем и роботизированных устройств. В обзоре представлены современные концепции реабилитации больных с церебральным ишемическим инсультом. Освещены вопросы медицинской, трудовой и социальной реабилитации. Особое внимание уделяется немедикаментозным методам лечения, основанным на биологической обратной связи с использованием компьютерных технологий.

Ключевые слова: *реабилитация, ритмическая стимуляция, нейропатическая боль головного мозга, дозовые меры.*

MIYA QON TOMIRIDAN KEYIN BEMORLARNI REABILITATSIYA QILISH

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Buxoro davlat tibbiyot instituti

✓ **Rezyume**

Bemorning hayot sifati ko'p jihatdan yo'qolgan funktsiyalarni tiklash darajasiga bog'liq. O'z navbatida, ularning tiklanish darajasi boshlangan vaqt, dozalash va boshlangan rehabilitatsiya tadbirlarining davomiyligiga bog'liq. Statistika shuni ko'rsatadiki, miya qon tomir kasalliklari zamonaviy jamiyatning eng muhim tibbiy va ijtimoiy muammolaridan biri bo'lib qolmoqda. Miya qon tomirlarini rehabilitatsiya qilish, samarali tashxis qo'yish va sifatli davolanishga qaramay, har

doim ham etarli darajada samarali emas, bu qisman mamlakatimizda bemorlarni reabilitatsiya qilish tizimi etarli darajada rivojlanmaganligi bilan bog'liq. Shu bilan birga, so'nggi o'n yil ichida an'anaviy reabilitatsiya usullariga raqamli texnologiyalar, kompyuterlashtirilgan tizimlar va robotlashtirilgan qurilmalardan foydalanishga asoslangan ishlanmalar qo'shildi. Tadqiqotda miya yarim qon tomirlari bilan kasallangan bemorlarni reabilitatsiya qilishning zamonaviy tushunchalari keltirilgan. Tibbiy, mehnat va ijtimoiy reabilitatsiya masalalari yoritilgan. Kompyuter texnologiyalaridan foydalangan holda biofeedback asosida davolashning farmakologik bo'lmagan usullariga alohida e'tibor qaratilmoqda.

Kalit so'zlar: reabilitatsiya, ritmik stimulyatsiya, miya neyropatik og'rig'i, dozalash choralari.

Relevance

Purpose of the work: to summarize the achievements of countries in the field of rehabilitation and stroke patients over the past 5 years. Research method - literature review.

And the relevance. Stroke is the most important medical and social problem. More than a million stroke survivors live in our country, and more than 450 thousand new cases of this disease are registered annually. [1,2] In more than half of patients who have suffered intracerebral bleeding, domestic independence is not restored, and therefore more than 80% of people of working age become disabled. The leading factor of disability in a significant number of patients is movement disorders - a symptom of brain damage in both the acute and chronic stages of the disease. [3,4] In the acute stage, they are detected in 70-90% of patients, after a year the residual defect persists, in at least half of the survivors. Stroke ranks first among all causes of disability in middle-aged and elderly people. In recent years, about 30% of cases of morbidity have been in the working age (up to 65 years). The main disabling disorders after a stroke are motor and speech defects, cognitive and psychoemotional disorders, and dysfunction of the pelvic organs. [3] dysfunctions of the upper limb In this regard, the question of selecting the most effective methods of rehabilitation for patients with this pathology is of particular relevance [1,2].

Rehabilitation of patients with cerebral stroke remains one of the most urgent tasks of modern angioneurology. This is due to the high prevalence of the disease, the high degree of disability and mortality of patients, the ambiguity of approaches to the choice of treatment tactics. According to WHO materials, the incidence of strokes ranges from 1.5 to 7.4 per 1000 population [2]. The highest incidence is observed between the ages of 50 and 70 years. So, at the age of 50-59 years, the incidence of strokes is 7.4, and at the age of 60-69 years - 20 per 1000 population. Vascular lesions of the brain in now they are among the leading causes of mortality in the population, accounting for about 14% in its

structure [5]. The factors contributing to the development of vascular diseases of the heart and brain are the conditions of modern life, primarily environmental problems, urbanization and automation, nervous tension, insufficient physical activity, the growth of diabetes mellitus, the peculiarities of modern nutrition, increased alcohol consumption, the absence of radical means and methods of combating atherosclerosis and hypertension. More than 400,000 registered in Russia strokes every year, this disease ranks second in the structure of overall mortality after cardiovascular diseases and first place as a cause of permanent disability. Mortality rates from cerebrovascular diseases (CVD) in our country are constantly increasing and are among the highest in the world (1980 - 243.6, 1985 - 264.4, 1996 - 279.2, 1997 - 285.9 per 100 000 population) [1,2]. Mortality in the acute period of stroke reaches 30-35% and increases by 12-15% by the end of the first year after stroke. In general, cerebral stroke in half of patients occurs before the age of 60, i.e. strikes people who are still full of strength and capabilities. Most of the survivors become disabled (no more than 20% of patients return to work) and require long-term rehabilitation treatment, and often outside care. Thus, the solution of the problem of cerebrovascular diseases, their prevention, treatment and labor rehabilitation seems to be a task of both medical and medico-social importance for the state and its economy. Medical and social rehabilitation is a multidisciplinary field of health care, which includes a variety of types of intervention - medical, physical, psychological, social, professional, economic, pedagogical.

The goal of rehabilitation is achievable only under the condition of close integration and coordination of the activities of specialists of various profiles participating in the rehabilitation process. The diversity of rehabilitation tasks necessitates a conditional division of all areas of this work into types or aspects: therapeutic (WHO calls it "medical"), physical,

psychological, social, professional, pedagogical, occupational therapy. The main tasks of complex rehabilitation therapy for the purpose of rehabilitation are the restoration of impaired functions and the development of compensatory mechanisms of the patient's motor activity for his physical and social adaptation. This is a system of medical activities aimed not only at restoring the patient's ability to self-service and work.

Purpose of the work: to summarize the achievements of countries in the field of rehabilitation of stroke patients over the past 5 years. Research method - literature review. And analysis of the effectiveness of modern methods of rehabilitation of patients, and the influence of modern technologies in the aftercare of patients with stroke. Organization of a complex system of care with the obligatory consideration of the specifics, clinical features and variants of the course of the disease.

Result and discussion

In order to analyze the effectiveness of modern methods of rehabilitation of stroke patients, we studied the data of domestic and foreign scientific sources. Subject of research: rehabilitation of stroke patients. Subject of research: the impact of modern technologies (video training) on the quality of rehabilitation of stroke patients. 235 The study involved 20 men, aged 45-50 years, who underwent stroke 1 month ago and were discharged for follow-up treatment at an outpatient center at their place of residence. According to the conclusion of the neurologist, all patients had the same impairment of motor function - paresis of the left arm with an assessment of muscle strength of 2 points (pronounced paresis). The subjects were divided into 2 equal groups. The first underwent rehabilitation only in the clinic. The second - in addition to classes in the clinic, received a disk for classes at home, compiled together with a rehabilitation therapist. A video lesson was presented on the disk, according to which patients were taught to independently perform the necessary exercises. After 1 month, the patients underwent a second examination by a neurologist, the results of which revealed: 1. In the group of subjects who underwent rehabilitation only in the polyclinic, 8 patients at the time of the second examination had paresis of the left arm with an assessment of muscle strength of 3 points (moderate paresis) and 2 patient at 3-4 points. 2. In the group that worked additionally at home, using a video lesson, 7 patients had paresis with an assessment of muscle strength of 4 points (mild paresis) and 3 patients

fully restored movement in the arm and muscle strength. It should be noted that the studies were conducted with the participation of patients admitted for rehabilitation, dysfunction of the upper limb • acute period, • early recovery period, • late recovery period, • residual period in which 222 patients took part, as well as those who did not have cognitive and coordinating impairments. The discussed works differed in terms of quality, type and duration of procedures, conditions for their implementation (on an inpatient or outpatient basis), duration of classes, measuring instruments (tests, scales, questionnaires, etc.) and evaluation of results. 75% of the studies were conducted in patients who had a stroke more than 6 months ago and completed standard rehabilitation. It noted statistically significant improvements in the function of the upper limb at a period of 3 to 9 months after a cerebral accident. Also, the timely use of rehabilitation therapy presented in the Cochrane database indicates the relationship of clinical improvement with the nature and amount of exercise, as well as with the individual characteristics of patients. It was noted that further study of these parameters is necessary in order to identify factors that increase the intensity of such therapy. It has been proven that in 54% of patients, arm strength increases after training with the use of electromechanical or robotic devices, while no side effects have been identified. At 62 % of recovered observed ulu h w ix functions top horse chnosti by invoking a method of a claim sihonevrologicheskoy correction. Evidence from systematic reviews suggests that the effectiveness of such therapy may depend on the area of the upper limb (shoulder or elbow) that is being addressed.

The discussed works differed in terms of quality, type and duration of procedures, conditions for their implementation (on an inpatient or outpatient basis), duration of classes, measuring instruments (tests, scales, questionnaires, etc.) and evaluation of results. It indicates statistically significant improvement of upper extremity function with the use of m electromechanical technology with cerebral accidents.

Conclusion

Rehabilitation of patients after a stroke requires the organization of a complex system of care with the obligatory consideration of the specifics, clinical features and variants of the course of the disease. Along with numerous approaches to the rehabilitation of patients, new ones are being created, which have shown their

effectiveness in the recovery of patients. The use of modern technologies, for example, a video lesson, improves the quality of rehabilitation of stroke patients and helps to speed up the recovery process. As far as proved to be effective such technologies as a combined application of paragraph sihonevrologicheskoy correction, training on the Code platform (multi-purpose training systems), and non-invasive brain-computer interface. As a result of the work carried out, a number of techniques with the greatest evidence base were identified, as well as techniques with unproven efficacy and not recommended for use to improve the function of the upper limb in patients with stroke were established. Let's consider them sequentially. The use of hypercapnic hypoxia in the rehabilitation of patients is being studied, which shows a clear increase in the tolerance of the brain to ischemia, the use of a number of stimulating technologies, including transcranial magnetic stimulation and electromyostimulation. Thus, the presented data indicate the effectiveness of the method of dynamic correction in the residual stage of stroke. The results of rehabilitation of patients using this method are influenced by the initial clinical features of the pyramidal defect, lateralization, the degree of tension and the preservation of homeostatic autonomic mechanisms of the motor act, the severity of emotional-affective disorders [5,9].

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FEATURES OF COMORBIDITY WITH CONGENITAL
HEART DEFECTS IN CHILDREN

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✓ *Resume*

The state of sick children aged 1 month to 18 years with congenital heart defects (CHD) against the background of comorbidity was studied. Of those examined, 77.5% of children, along with the underlying disease (CHD), were diagnosed with concomitant diseases - acute respiratory diseases (ARI). The authors argue that frequent acute respiratory infections can lead to a decrease in immunity and the formation of foci of chronic infections, the exacerbation of which is one of the reasons for the late surgical correction of congenital heart disease, resulting in a high risk of postoperative complications, mortality and a decrease in the quality of life of patients. The natural course of CHD against the background of comorbidity contributes to a decrease in the effectiveness of conservative therapy for heart failure.

Aim of study: clinical characteristics of congenital heart defects with comorbidity.

Materials and methods: the study included 160 sick children with congenital heart defects (CHD) under the age of 18 years. The control group consisted of 30 healthy peers (14 boys and 16 girls). Distributing sick children with CHD by gender, the structure determines the predominance of the male contingent. There are slightly more boys -88 ($55.0 \pm 0.3\%$) than girls-72 ($45.0 \pm 0.3\%$).

Resume: features of the functioning of immunity in critical periods of life, impaired cardiac hemodynamics and chronic hypoxemia are the cause of frequent acute respiratory infections and the development of an immunodeficiency state. Comorbidity significantly worsens the condition of patients with CHD, reduces the effectiveness of conservative treatment of heart failure, and causes a delay in the necessary surgical correction.

Key words: immunity, comorbidity, conservative therapy, congenital heart defects, foci of infection.

ТУГМА ЮРАК НУКСОНЛАРИ БИЛАН ТУГИЛГАН БОЛАЛАРДА КОМОРБИД
ҲОЛАТЛАР ХУСУСИЯТЛАРИ

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✓ *Резюме*

1 ойликдан 18 ёшгача, туғма юрак нуқсони (ТЮН) билан туғилган болаларда коморбидлик ҳолати ўрганилди. Текишилган беморлардан 77,5% болаларда асосий касаллик (ТЮН) фонида ҳамроҳ касаллик сифатида ўткир респиратор касаллик (ЎРК) аниқланган. Муаллифлар такидлашича, ТЮН фонида ЎРК билан тез-тез касалланиш иммунитет пасайиши билан бир қаторда сурункали инфекция ўчоқларини шаклланишига ҳам олиб келади, касалликнинг қўзғолиши ТЮНни хирургик даволашни кечикишига сабаб бўлади. Натижада оператив даводан сўнги асоратлар хавфи ошиши, ўлим кўрсаткичлари ўсиши ва ҳаёт сифати даражаси камайиши кузатилади. ТЮН коморбидлик фонида кечиши юрак етишмовчилигини консерватив даволаш самарадорлигини пасайишига олиб келади.

Тадқиқод мақсади: Туғма юрак нуқсонларининг коморбид ҳолатлардаги клиник хусусиятларини ўрганиш.

Материал ва услублар: Тадқиқотда туғма юрак нуқсонлари билан туғилган 18 ёшгача бўлган 160 та бола қатнашди. Назорат гуруҳига 30 та мос ёшдаги соғлом болалар кирди. (16 ўғил 14 та қиз). ТЮН билан бемор болалар жинс бўйича структураси ўрганилганда ўғил болалар қизларга нисбаттан кўпчиликни: ўғил болалар -88 ($55,0 \pm 0,3\%$), қиз болалар -72 ($45,0 \pm 0,3\%$) ташкил этишиди.

Хулоса: Ҳаётнинг критик давларида иммунитетнинг фаолият юритиши, юрак гемодинамикасининг бузилиши, ҳамда хроник гипоксемия иммунодефицит ҳолатлар ва қайталаниб турувчи ЎРКнинг асосий сабабчиси сифатида келтириш мумкин. Коморбид

ҳолатлар ТҶОН бор беморлар аҳволини сезиларли даражада оғирлаштиради, юрак этишмовчилигидаги консерватив давои самарасини пасайтириб, керакли хирургик коррекциянинг кечиктирилишига олиб келиши мумкин.

Калит сўзлар: коморбидлик, консерватив даволаш, иммунитет, инфекция ўчоги, тузма юрак нуқсони.

ОСОБЕННОСТИ КОМОРБИДНОСТИ ВРОЖДЕННЫХ ПОРОКАХ СЕРДЦА У ДЕТЕЙ

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✓ Резюме

Изучено состояние больных детей в возрасте от 1 месяца до 18 лет с врожденными пороками сердца (ВПС) на фоне коморбидности. Из обследованных у 77,5% детей наряду с основным заболеванием (ВПС) диагностированы сопутствующие заболевания – острые респираторные заболевания (ОРЗ). Авторы утверждают, что частые ОРЗ могут привести к снижению иммунитета и к формированию очагов хронических инфекций, обострение которых являются одним из причин поздней хирургической коррекции ВПС, в результате чего возникает высокий риск послеоперационных осложнений, смертности и снижения качества жизни больных. Естественное течение ВПС на фоне коморбидности способствует снижению эффективности консервативной терапии сердечной недостаточности.

Цель: клиническая характеристика врожденных пороков сердца при коморбидности.

Материалы и методы: исследованию были включены 160 больных детей с врожденными пороками сердца (ВПС) в возрасте до 18 лет. Контрольную группу составили 30 здоровых сверстников (14 мальчика и 16 девочек).

При распределении больных детей с ВПС по полу, структура определяет преобладание мужского контингента. Мальчиков несколько больше -88 (55,0±0,3%), чем девочек-72 (45,0±0,3%).

Заключение: особенности функционирования иммунитета в критические периоды жизни, нарушения сердечной гемодинамики и хроническая гипоксемия являются причиной частых ОРЗ и развития иммунодефицитного состояния. Коморбидность существенно ухудшает состояние больных с ВПС, уменьшают эффективность консервативной терапии сердечной недостаточности, становятся причиной отсрочки необходимой хирургической коррекции.

Ключевые слова: коморбидность, консервативная терапия, врожденные пороки сердца, иммунитет, очаги инфекции.

Relevance

Despite significant advances in the development of theoretical and practical aspects of congenital heart defects (CHD), the prevalence of CHD in the population does not decrease. Among congenital developmental anomalies leading to disability, CHD is 15–20% [2]. In recent years, the number of operated patients on an open heart has been increasing. Accordingly, the group of patients in need of repeated operations is naturally increasing. According to various authors, the number of re-operated for CHD is 10–40% of the number of primary operations [9].

In the structure of child mortality associated with malformations, CHD occupy the first line and among all those who died with heart defects,

in all cases, the pathology of the thymus gland (TG) was diagnosed [1].

It is known that in children with CHD there is often an increase in the size of TG [5]. In most cases, this technically complicates the correction of CHD and, as a result, there is a need for complete or partial removal of TG [3].

In children, TG increases with age, and reaches its maximum weight in the age period of 6–14 years. Physiological involution of the gland begins from 1 year, and at the same time, a special change in its structure occurs [7]. By the expression of cytokeratin's in thymic epithelial cells in CHD, the relationship between the state of the thymic reticuloendothelial stroma and the number of receptor excision rings (REC) in the

population of peripheral T-lymphocytes was traced [4].

In children with CHD, the morphological picture of premature “aging” of the thymus with signs of its functional dysfunction has been established. Activation of apoptosis, an imbalance between proliferative and apoptotic processes, violation of the subpopulation ratio of lymphocytes are prerequisites for the formation of an immunodeficiency state [6].

After improving the surgical treatment of CHD, complications from the nervous system acquired not only academic interest, but also practical significance. In children with CHD and convulsive syndrome, disorders associated with chronic cerebral vascular insufficiency and hypoxemia were noted [2].

In pediatric cardiac surgery, critical CHD requires early surgical correction and, without intervention, a very high mortality and survival rate with significant disability [8].

Purpose of the study: clinical characteristics of congenital heart defects with comorbidity.

Material and methods

The study included 160 sick children with congenital heart defects (CHD) under the age of 18 years. The control group consisted of 30 healthy peers (14 boys and 16 girls).

When distributing sick children with CHD by gender, the structure determines the predominance of the male contingent. There are slightly more boys - 88 (55.0 ± 0.3%) than girls - 72 (45.0 ± 0.3%).

All sick children with CHD were distributed according to M.F. Zinkovsky into 3 groups:

- 1 - a group of patients with critical heart defects. Surgical intervention in such children should be performed in the first hours or days of life - 3 (1.8%);
- 2- a group of patients for whom early surgical correction of CHD is not indicated due to minor hemodynamic disturbances - 13 (8.2%);
- 3- a group of patients with inoperable CHD or inoperable patients by somatic condition - 11 (6.8%).

The observed group consisted of the remaining 133 sick children who were shown planned surgery. Of these, 78 (58.6%) sick children after surgical correction of CHD, 44 boys (56.4 ± 0.2%) and 34 girls (43.6 ± 0.5%).

The structure of CHD of the observed group was 77- “white” (57.9%) and 56- “blue” malformations (42.1%): ventricular septal defect (VSD) - 30 (22.5%), tetralogy of Fallot (TOF) - 30 (22.5%), transposition of the great arteries

(TGA) - 26 (19.5%), atrial septal defect (ASD) - 30 (22.5%), patent ductus arteriosus (PDA) - 11 (8, 4%), pulmonary stenosis (PS) - 6 (4.6%).

Sick children with CHD, in order to correct cardiac hemodynamic disorders due to the underlying disease and other concomitant diseases, such as acute bronchopneumonia, obstructive bronchitis, have repeatedly received conservative treatment. Treatment of children with CHD for colds in a hospital setting included the appointment of antibiotics, anticoagulants, furosemide, followed by switching to verospiron. In the observation group, all sick children were prepared for surgery as planned. Surgical correction of CHD was performed at the TashSPMI cardiac surgery center and the Vakhidov's Republican Center for Thoracic Surgery, as well as abroad: in the Russian Federation, Kiev and India.

Results and Discussions

It was found that in children with CHD an early formation of foci of chronic infections is observed. So, in our studies, along with the main disease (CHD), 77.5% of children were diagnosed with concomitant diseases: chronic tonsillitis, sinusitis, otitis media, urinary tract infection, anemia, dental caries, thyroid hyperplasia, lag in physical and mental development.

The analysis of the surveyed contingent depending on the place of residence showed the prevalence of CHD among the villagers. Characteristic was an increase in the incidence of cerebrospinal fluid and other complex (blue) malformations (TOF, TGA) among children living permanently in the countryside.

The age-gender structure of the observation group is the largest number of boys under the age of 10 years, and girls are more often registered at the age of over 11 years. The manifestation of such a pattern in CHD is associated: firstly, with the peculiarities of the functioning of immunity in children in critical age periods (according to D.V. Stefani, D.E. Veltishchev: the first 30 days of life, 3-6 months, 2nd year of life, 4-6 years of life, adolescence: in girls, 12-13 years old; in boys, 14-15 years old), regardless of the type of defect; secondly, with early puberty (sexual) development of girls.

The most important factor in CHD is a hereditary predisposition. According to our data, hereditary burden was observed in 65 (48.8%) sick children, on the paternal side - in 13 (20.0%), maternal - in 50 (76.9%), was not observed in both lines. In 2 cases (3.1%), a family form of CHD was established. Parents

suffered from various forms of CHD. The cardiac pathology of parents and children did not always coincide.

Analyzing pregnancy parity, showed that 48 children (36.1%) born from the first pregnancy,

35 (26.3%) from the second, 50 (from the third and more pregnancies) (37.6%) . The age structure of parents of sick children shows that more often parents were in the average reproductive age of 20-29 years (Table 1).

Table 1

Age structure of parents of sick children with CHD

Place of residence	17-19 years old		20-29 years old		30-39 years old		40-49 years old	
	Abs	%	Abs	%	Abs	%	Abs	%
City	6	50,0	36	48.0	22	51,2	1	33.3
Village	6	50,0	39	52.0	21	48.8	2	66.7
Total	12	9.0	75	56.4	43	32.3	3	2,3

All examined patients were born full-term, 27 patients of them weighing up to 2500 g. (20.3%), 106 sick children - over 2500 gr. (79.7%). In the history of 75 (56.4%) mothers of sick children with CHD, a pathological course of pregnancy was observed, which was associated with extra genital (48.0%) and genital (52.0%) diseases. In mothers of examined sick children with CHD in 44% of cases, TORCH infection, in particular CMV, was anamnesticly established.

Clinical manifestations of CHD, depending on the species, were diverse. With “blue” defects (TOF, TGA, ACD) and PS, clinical symptoms appeared in the first 6 months of life, but some “white” CHDs, such as PDA, VSD, ASD were undetected and diagnosed throughout their lives.

Objectively, when examining patients with “blue” CHD, cyanosis (92.6%), pulsation and swelling of the cervical arteries (36.8%), “heart hump” (89.3%), “drumsticks” (90.4%) were observed), a symptom of “watch glasses” (90.4%), a lag in physical development (81.4%). Characteristic symptoms were shortness of breath and cyanosis. In 32% of patients with “blue” CHD, a very pronounced cardiac hump was observed, and in patients with “white” CHD, there was no cardiac hump in 31% of patients with VSD.

In patients with ASD, the clinical picture was manifested in 2 versions: with high pulmonary hypertension and without pulmonary hypertension. With age, all children with CHD have complaints of pain in the heart, shortness of breath, palpitations, interruptions in heart function, loss of appetite, and frequent respiratory infections.

With TOF and TGA, frequent dyspnea-cyanotic attacks with characteristic manifestations were observed, and a gradual development of symptoms of heart failure and chronic hypoxemia was also characteristic.

Physical development lag was found in 59 sick children with CHD (44.4%). Of these, 48 patients with “blue” CHD (81.4% of cases) in whom growth and developmental lag was found against the background of chronic hypoxemia.

Conclusions

Features of the functioning of immunity in critical periods of life, impaired cardiac hemodynamics and chronic hypoxemia are the cause of frequent acute respiratory infections and the development of an immunodeficiency state. Comorbidity significantly worsens the condition of patients with CHD, reduces the effectiveness of conservative treatment of heart failure, and causes a delay in the necessary surgical correction.

Throughout life with age, the formation of a vicious circle is characteristic of patients with complex (blue) types of CHD: the presence of cardiovascular anomaly contributes to the violation of hemodynamics, as a result of which tissue hypoxia develops. The latter, in turn, helps delay physical development and the development of frequent acute respiratory infections. Frequent acute respiratory infections lead to a decrease in immunity and the formation of foci of chronic infections, the exacerbation of which is one of the causes of late surgical correction, resulting in a high risk of postoperative complications, mortality and a decrease in the quality of life of patients with CHD.

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**MORPHOLOGICAL CONDITION OF GENERATIONS LIVER BORN UNDER
CONDITIONS OF CHRONIC INTOXICATION OF THE MOTHERS ORGANISM**

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✓ **Resume**

Experiments have shown that chronic toxic hepatitis in the mother adversely affects the processes of postnatal growth, development and formation in the liver blood vessels and tissues of the offspring born from it. The pathomorphological changes that occur in the tissues and blood vessels of the azo lead to the development of processes that lag behind the development and formation in the later stages of postnatal development. These processes indicate the need to develop rational, science-based treatment and prevention measures in the treatment of the offspring born with existing pathology in the mother, the prevention of their diseases.

Key words: chronic toxic hepatitis, mother-offspring, hepatic vascular, tissue.

**МОРФОЛОГИЧЕСКОЕ СОСТОЯНИЕ ПЕЧЕНИ ПОТОМСТВА, РОЖДЕННЫЕ В
УСЛОВИЯХ ХРОНИЧЕСКОЙ ИНТОКСИКАЦИИ МАТЕРИНСКОГО ОРГАНИЗМА**

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✓ **Резюме**

Гепатотоксины, введенные в организм матери до беременности и образующиеся в нем при гепатите, попадая в кровь и с последующим в материнское молоко, способствуют развитию воспалительно-реактивных изменений в сосудисто-тканевых структурах аналогичного органа, т.е. в печени потомства в их ранние периоды жизни постнатального развития. Эти патоморфологические изменения в печени потомства, в последующем приводят к запаздыванию процессов постнатального роста и становления органа и системы органов в целом.

Ключевые слова: хронический токсический гепатит, мать-потомства, сосуды, ткани

**ОНАДАГИ СУРУНКАЛИ ЗАҲАРЛАНИШ ШАРОИТИДА ТУҒИЛГАН БОЛАЛАРИ
ЖИГАРИНИНГ МОРФОЛОГИК ҲОЛАТИ**

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✓ **Резюме**

Экспериментал ҳайвонлардаги илмий изланишлар кўрсатдики, онага ҳомиладорликдан олдин юборилган ва кейинчалик гепатити сабабли организмида ҳосил бўлган гепатотоксинлар қон орқали ва она сути орқали бола организмига тушиб, унинг илк постнатал ривожланиш давларида яллиғланиш-реактив жараёнларини чақиради. Бу патоморфологик ўзгаришлар постнатал ривожланишнинг кечки давларида авлод жигарида ва умуман аъзолар тизимида ўсиш ва шаклланиш жараёнларининг ривожланишдан орқага қолишига олиб келади.

Калит сўзлар: эксперименталь тадқиқотлар, сурункали токсик гепатит, она-авлод, жигар, қон томирлар, тўқималар

Relevance

The problem of preserving maternal health and offspring to this day remains the leading one in the policy of our state. The problem of the influence of various unfavorable factors on the offspring carries not only medical, but also enormous social significance. This is due to the fact that in recent decades, there has been a demographic crisis all over the world - the birth rate is decreasing and, despite the development of technologies in medicine, there is a high mortality rate of newborns. This problem can be attributed to the fact that the number of women of fertile age with various extragenital diseases has increased, among which diseases of the hepatobiliary system, including chronic hepatitis, which are one of the important causes of maternal and perinatal pathology, occupy a special place. Scientists are also sounding the alarm about the action of many drugs, adverse environmental factors, stress, viral and infectious diseases that have embryotoxic, fetotoxic and teratogenic effects, depending on which periods of embryo formation they act and how long they affect [1, 4, 5, 7, 10, 12].

The aim of the study was to study the effect of chronic toxic hepatitis in the mother on postnatal liver morphogenesis in the offspring of experimental animals.

Materials and methods

The experiments were carried out on white outbred Wistar rats. The animals were divided into 2 groups of 30 animals each: group 1 (control) – intact animals, group 2 – rats, which were injected weekly for 6 weeks with heliotrin at the rate of 0 to create a model of chronic toxic hepatitis in rats, 5 mg/100 g of mass. 10 days after the last injection, males were added to them and to the females of the control group. Rats born and fed by mothers with chronic toxic hepatitis on the 3rd, 7th and 21st and 30th days of postnatal development were decapitated and pieces of liver tissue were taken for histological examination. The material was subjected to

general morphometric, electron microscopic studies. In order to study the intraorgan vessels of the liver, a solution of black ink was injected intracardiacally according to the original method of M.A. Kolesov through the left ventricle of the heart. Vascular lightening was performed according to the method of A.G. Malygin.

Results and discussions

On the 3rd-7th day of life of postnatal development of rat pups, born and fed by mothers with chronic toxic hepatitis, the following picture was observed in the vascular tissue structures of the liver: in the liver microstructure of newborn rat pups (3-7 days), hepatocytes were located loosely and randomly, dividing wide and full-blooded sinusoidal hemocapillaries. In some hepatocytes, the phenomena of hydropic dystrophy were noted, pycnosis and lysis of nuclei were observed in some cells. Morphometric studies showed that the size of hepatocytes increased (18.5 ± 0.8), compared with the indicators of the control group of animals (in the control 12.0 ± 0.4). The number of binucleated liver cells is relatively higher, 2.7 ± 0.3 (in the control, 1.2 ± 0.04). Hepatic lobules and beams are poorly constructed. At electron microscopic examination, the cytoplasm of hepatic cells was not grained, the nuclei of many hepatocytes had an oval shape. Mitochondria are abundant, with an electron-dense matrix. In some places in the interlobular connective tissue, infiltration and expansion of sinusoidal hemocapillaries were detected. After 21 days of postnatal development, the animals of the experimental group showed a slight increase in the severity of the pathomorphological changes described above. In some places, against the background of a distinct beam-lobular structure of the liver, places with discompletion of the liver parenchyma were revealed, liver cells were located randomly. Mononuclear cell infiltration was observed in the interlobular connective tissue (fig.1).

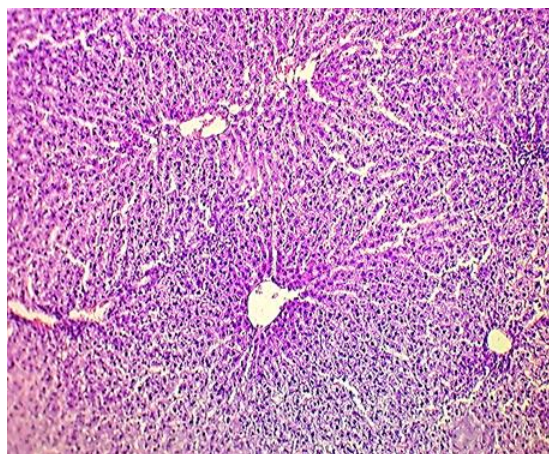


Figure 1. Liver of rat pups at 21 days of postnatal life. Hematoxylin and eosin stain. About 10x10.

Electron microscopically, the nuclei of hepatocytes are round, often oval in shape with two or three nucleoli located closer to the nuclear membrane. Kupffer cells are single. The endoplasmic reticulum is often represented by vacuoles, vesicles of various sizes. Disse space is slightly expanded in places. In some centers of the lobules, a decrease in the number of hepatocytes is noted, there is a slight increase in granulomas and small cell nodules adjacent to the portal tracts. Venous vessels of the liver are dilated in places, full-blooded. In the animals of the control group, a distinct beam-lobular structure of the liver was noted at this time. When studying animals in more distant periods of postnatal development (on the 30th day), the experimental group of animals

showed significant individual fluctuations in the severity of pathomorphological changes in the liver and the nature of age dynamics. While in some rat pups these pathomorphological changes gradually subsided somewhat with age, in other animals they still persisted, as did some edema of the portal tracts. In some places, hepatocytes with destructively dystrophic changes in the nucleus and cytoplasm of the liver were found. The parenchyma was divided by thin layers. The interlobular connective tissue forms the stroma, in which the vessels and bile ducts are located, the bald and lobular structure is preserved. Vessels with moderate blood filling. Parenchymal cells are mononuclear in 70%, and in 30% cells have 2 nuclei (fig.2).

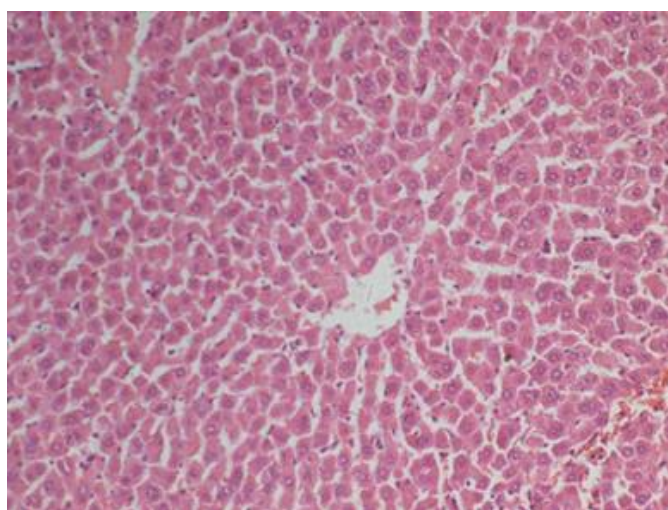


Figure 2. Liver of rat pups at 30 days of postnatal life. Hematoxylin and eosin stain. About 10x10.

Liver of rat pups at 30 days of postnatal life. Electron microscopic endothelial stellate reticulum was enlarged and abundant. In animals of the control group, at this time, the liver microstructure acquired a typical lobular structure. Portal tracts, represented by loose fibrous connective tissue, were clearly identified. The vascular pattern of the

liver was also consistent with that in adult intact rats.

Discussion of the results obtained

The results obtained show that the extragenital pathology of the mother has a negative effect on the postnatal development of the offspring organism. Among the numerous types of

extragenital diseases of the mother, a special place, due to its prevalence, is occupied by liver pathology [2, 3, 6, 8, 13]. It is known that children born to mothers with chronic liver pathology are predisposed to various diseases, including infectious ones, which implies a decrease in the nonspecific resistance [9, 11, 14, 15, 16 17,] of the offspring organism. The results of our research once again prove that the pathology of the mother's liver leads to pathomorphological changes in the analogous organ of the offspring both in the antenatal and postnatal periods of development and growth. These processes subsequently cause a delay and lag in the processes of postnatal development and formation, as evidenced by the morphological and morphometric parameters of the vascular tissue structures of the liver of the offspring [18,19,20].

Analyzing these processes, we believe that a violation of the detoxification function of the mother's liver is of great importance here. The fetal liver is not yet ready for sufficient detoxification of metabolic products. It is clear that in this case the accumulation in tissues, including the liver, of substances (pyruvic acid, lactic acid. Products of free radical oxidation, metabolites, etc.) is possible, which has a cytotoxic effect. A damaging effect on the internal organs of a developing fetus can also be exerted by such products that, when the placenta permeability is impaired, penetrate the fetus, but normally were detoxified in the mother's liver and did not arrive at the fetus. The consequences of such an effect are noted already in the early postnatal period of development in the form of a gradual dystrophic process in the vascular-tissue structures of the organs under study.

Another reason for the pathomorphological changes in the offspring, apparently, is due to certain immunopathological changes in the body, because the protein products of decaying hepatocytes cause an autoallergic reaction, the possibility of such a mechanism is indicated by destructive changes in the internal organs of the offspring. In addition, the structural disorders of the digestive system organs and their microvasculature in rat pups born to mothers with CTH, established by us, may be the result of a deficiency of plastic and a number of biologically active substances for the fetus during the embryonic period of development. This deficiency occurs when the mother's liver function is impaired, placental insufficiency, and the action of products of impaired metabolism. In the mother's blood, as a result of the inhibition of the antitoxic function of the liver, perverted metabolic products accumulate, which affect the embryos during the

prenatal period of development. On the other hand, the developing hepatocellular failure leads to changes in the mother's body - this is reflected in the change in the quantitative and qualitative composition of the mother's breast milk and, subsequently, these factors affect the processes of postnatal growth, development and formation of offspring organs.

The combination of the above factors, in our opinion, is responsible for the violation of histogenesis and morphogenesis in the fetus, gradually developing dystrophic processes in postnatal ontogenesis, slowing down and lagging behind the growth, development and formation of organs and systems. It is possible that damage to the mother's liver can induce in the fetus a violation of the development of not only the digestive system, but also other internal organs. Endoxins (products of impaired metabolism) can enter the fetus, and then the newborn, not only through the placenta or breast milk, but also through the amniotic fluid, which is swallowed in the last 3 months of pregnancy: the fetus swallows about 750 ml of amniotic fluid per day. The result of this is the depletion of compensatory-adaptive mechanisms, slowing down and lagging behind in the development of organs and systems of the fetus and then in the newborn.

Thus, our studies contributed to the disclosure of some mechanisms and morphofunctional disorders in the prenatal and early postnatal periods of growth, development and formation of the vascular tissue structures of the liver of the offspring under conditions of maternal liver pathology.

Pathogenetically scientifically grounded therapy of chronic toxic hepatitis in mothers and offspring can normalize the morphological and functional state of the internal organs of mothers and postnatal growth, development and formation of internal organs of offspring born and fed by mothers with a burdened history (liver pathology, toxicosis, gestosis, IDA of pregnant women, etc. etc.).

Thus, concluding the discussion of the results of experimental studies, the features of ontogenesis of the offspring of animals with liver damage, it should be emphasized that these features are determined by the conditions of the fetus in the prenatal period, the state of the newborn, the degree and nature of these disorders and, finally, the individual properties of the developing organism and its ability to compensate for arising violations.

The results obtained are of fundamental theoretical importance for practitioners, they contribute to the development of scientifically

based pathogenetic therapy, as well as the prevention and treatment of possible consequences of mother's hepatitis for offspring. They point to the need to improve the health of the mother for the optimal development and formation of organs and body systems of the offspring. Further research in terms of correction of pathomorphological changes, regulation of postnatal development and formation of the body, prevention of morphological and functional disorders, in the development of scientifically based methods for predicting, preventing and treating diseases of the gastrointestinal tract in early childhood.

Conclusions

1. Chronic toxic damage to the mother's liver negatively affects the processes of postnatal growth, development and formation of tissue structures of the offspring liver.

2. Pathomorphological changes in the vascular-tissue structures of the offspring liver, subsequently lead to a delay in the processes of postnatal development and formation of the liver and the organ system of the offspring as a whole.

3. Mothers with chronic pathology give birth to offspring with impaired "start of health", all this indicates the need to develop scientifically based therapeutic and preventive measures in order to prevent pathology in children born to mothers with chronic liver pathology.

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✓ *Resume*

Surgical correction of colon pathologies in most cases is a forced manipulation and is performed for some congenital and acquired diseases of the gastrointestinal tract (GIT) in children. Colon resection is a surgical procedure that involves the removal of a portion of a given organ. Such manipulations must be taken extremely seriously and carefully, any complications arising intraoperatively or after, can cause enormous damage not only to the patient's health, but also to his life.

Keywords: resection, large intestine, complications.

АНАЛИЗ РЕЗУЛЬТАТОВ ЛЕЧЕНИЯ ДЕТЕЙ С ЗАБОЛЕВАНИЯМИ ТОЛСТОЙ
КИШКИ, ПОДЛЕЖАЩИМ ОБЩИМ РЕЗЕКЦИЯМ

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Хирургическая коррекция патологий толстой кишки в большинстве случаев являются вынужденными манипуляциями и выполняются при некоторых врожденных и приобретенных заболеваниях желудочно-кишечного тракта (ЖКТ) у детей. Резекция толстой кишки – это хирургическая манипуляция, которое подразумевает удаление части данного органа. К таким манипуляциям необходимо отнести крайне серьезно и осторожно, любые осложнения возникающее интраоперационно или после, смогут нанести огромный ущерб не только в здоровье больного, но и его жизни.

Ключевые слова: резекция, толстый кишечник, осложнения.

ЙЎҒОН ИЧАК РЕЗЕКЦИЯСИ ЎТКАЗГАН БЕМОР БОЛАЛАРДАГИ ЎЗГАРИШЛАР
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Болаларда йўғон ичак резекцияси кўпгина ҳолларда мажбурий бажариладиган амалиёт ҳисобланиб, ошқозон-ичак тракти (ОИТ) аъзоларининг тугма ёки ортирилган касалликларини даволашда бажарилади. Йўғон ичак резекцияси – хирургик амалиёт бўлиб, ушбу аъзонинг маълум қисмини олиб танлаш билан кечади. Бу амалиётни бажариш жуда эҳтиёткорлик ва жиддий ёндошушни талаб қилади, чунки операция вақтида ёки ундан кейинги юзага келадиган асоратлар нафақат бемор соғлиғига, балким унинг ҳаётига ҳам катта зиён етказиши мумкин.

Калит сўзлар: асоратлар, йўғон ичак, резекция.

Relevance

Despite some success in the treatment of surgical pathologies of the gastrointestinal tract in children, the number of colon resections does not tend to decrease. [4,15,23,25]. In this regard, it is of great importance to study the consequences of such operations and analyze

possible postoperative disorders, developing in operated children [1,8,11,16]. The variety of functions of the large intestine predisposes the occurrence of various postoperative disorders of these functions, because it not only participates in the digestion of food, the formation of feces and

its excretion, but also participates in mineral metabolism, the absorption of the liquid part of the chyme, inhabiting microorganisms not only participate in the synthesis of some vitamins, but they can also lead to additional problems in the postoperative period [9,12,17,27].

The functional state of the remainder of the intestine largely depends on the volume of preservation of the colon, since the latter can play a significant role in the process of digestion and absorption. After colon resection, the patient's body undergoes significant pathophysiological changes [3,5,13,19,32]. In order to understand the pathophysiological changes occurring in the left part of the intestinal tube, it is necessary to know the processes occurring in a normally functioning gastrointestinal tract. Usually the colon slows down the passage of food masses, which also improves the absorption of nutrients [11,14,26,30]. Having overcome acute problems associated with maintaining water and electrolyte balance and meeting energy requirements, patients with extensive colon resections often face continuous diarrhea. The thing is, that excessive intake of carbohydrates into the colon can lead to osmotic diarrhea [6,8,31,33]. Large intestine resection leads not only to a decrease in the absorption capacity, but also to a rapid transit of food masses. Decreased absorption times also exacerbate nutrient deficiencies [9,11,18,35].

Currently, the tactics of managing sick children with suspected gastrointestinal pathology is unified in large medical centers. In most cases, the initial clinical manifestations of the disease are manifested by the picture of acute intestinal obstruction in the neonatal period [10,12,20,24,30]. At the same time, the tactics of surgical treatment is largely determined by the clinical situation and the tactics of surgical intervention largely depends on the competence of medical personnel. After performing bowel resections in children, the quality of life and rehabilitation is subsequently hampered by complications arising after this kind of surgery [20,22,34,36]. When performing surgical corrections in the gastrointestinal tract, including in the colon, various complications often arise in the patient's body, which can affect the quality of life of the latter, requiring rehabilitation. In this regard, the study of this problem is relevant [4,7,12,28,29].

Purpose of the study: Analysis of the results of treatment of colon pathology in children undergoing resection in order to study and improve the results of treatment.

Materials and methods

This work is based on the data of examination and treatment of 59 patients, including 33 (55.9%) boys, 14 (44.1%) girls, with surgical pathology of the large intestine, who received surgical treatment in the clinical base of the Department of Pediatric Surgery of the Bukhara State Medical Institute, in the period 2014-19. Of the 59 examined patients, 31 (52.5%) anorectal malformations were found that required partial resection of the colon (high and fistulous forms of atresia ani et rekti), Hirschsprung's disease was found in 14 (23.7%) patients, acute intestinal obstruction due to blind-colonic intussusception in 4 (6.8%) patients, dolichosigma in 3 (5.1%) patients, congenital intestinal obstruction with total agangliosis (disease Sulzer-Wilson) at 1 (1.7%) sick and subsegmental agangliosis of the colon in 2 (3.4%) patients, Payer's disease in 2 (3.4%) patients, total polyposis in 1 (1.7%) patients, post-traumatic colon resection in 1 (1.7%) patients, and partial colon resection in the presence of adhesive disease 1 (1, 7%) patients. All patients underwent emergency or routine surgical intervention, depending on the manifestation of these pathologies.

Results and discussion

We carried out clinical laboratory and X-ray studies in 59 patients. To study the pathology of the colon, a survey radiography and irrigography were performed at the time of filling and after emptying, in various positions of the patient to study fixations and pathological displacements of the colon. To determine anomalies of the anorectal region, the method for determining the level of atresia of the rectum and anus according to Vangestin was used. The tactics of surgical treatment were based on the level of atresia, the presence or absence of fistulas in adjacent organs. When diagnosing a high form of atresia ani et recti (with and without fistula), in 24 (77.4%) cases, 24 sigmoidostomy was imposed, the stoma was eliminated at an older age, and the colon was partially resected with subsequent transanal reduction according to Romuald-Rebijn, in 7 (32, 64%) patients underwent simultaneous abdominal-perineal proctoplasty. In 14 (82.4%) patients with Hirschsprung's disease, abdominal-perineal proctoplasty was performed using the Saave-Bale method, while subtotal colectomy was performed in 2 patients, and total colectomy in one patient. Transanal descent and removal of the aganglionic part of the large intestine according to Delatore-Mandragona was used in 3 (17.6%) patients. In 3 (5.1%) patients with dolichosigma and Payer's disease, 2 (3.4%)

patients underwent partial resection with an end-to-end anastomosis.

In addition, patients with diagnoses of total polyposis in 1 (1.7%) patients, post-traumatic resection of the large intestine in 1 (1.7%) patients, and partial resection of the colon against the background of adhesive disease 1 (1.7%) underwent surgery. The decisive factors here were the data of irrigography and the clinical and functional state of the colon. Only those sick children who had pronounced signs of lengthening of the colon, kinks, impaired patency and fixation were subject to surgical treatment. The operations were aimed at eliminating the lengthened type of the colon or aganglionic zone, by removing a significant part of it, which makes it possible to create optimal conditions for the functioning of the part of the colon remaining after resection and, in most cases, leads to normalization of the stool.

In the postoperative period, for 5-6 days, patients were kept on parenteral nutrition, nutritional support was carried out taking into account the body's needs for food ingredients and fluids. The need of the patient's body for fluids was subtracted taking into account the physiological needs, fluid, current pathological losses and volume replenishment. For the prophylactic purpose of possible postoperative complications from the postoperative wound and to prevent sepsis, all operated patients were prescribed IV-generation cephalosporins, intravenous metrogil and macrolides in age-related dosages, taking into account the etiology of possible causative agents of surgical infection. To stabilize the microbiocenosis in the gastrointestinal tract (GIT), probiotics and eubiotics were prescribed, taking into account clinical and laboratory parameters. Prescribed the drug "Lactofiltrum" for detoxification and removal of toxins from the gastrointestinal tract. In all observed patients, postoperative wounds in the abdominal wall healed by primary intention.

From local complications in the early stages after surgery according to the Soave-Bale method perianal skin lesions were significant. This complication in all children was mainly associated with an increased frequency and consistency of stools and in a number of observations was explained by the course of postoperative enterocolitis. Inflammatory complications developed in 2 children against the background of maceration. Transient fecal incontinence was observed in 2 (0.5%) patients up to 4 weeks after surgery. The restoration of the passage took place starting from 3-5 days after the operation, but rather high - from 10 to

20 times a day during the first 6 months after the operation. In terms of more than 6 months after the operation, the frequency of stools remained quite frequent: up to 7-15 times a day. Frequent liquefied stool as a manifestation of post-colectomy syndrome was combined with stool liquefaction against the background of infectious enteritis.

The latter had a recurrent character, arose as a result of viral and bacterial infections, dysbiosis in 7 (22.6%) children. From local complications in the early stages after Soave-Bale operation peri-anal skin lesions were significant. This complication in all children was mainly associated with the frequency and consistency of stools and in a number of observations was explained by the course of enterocolitis. Inflammatory complications developed in 2 children against the background of maceration. Transient fecal incontinence was observed in 27 (87.1%) patients within 4 weeks after surgery. In the long-term period, liquid stool incontinence persisted for up to 6 months. in 9 (29%) children, in terms of more than 1 year, incontinence of frequent loose stools was noted in 4 (12.9%) children.

When analyzing the complications that arose in the postoperative period, the following was found: in the postoperative period, most patients had frequent, liquid, unformed stools, sometimes dark green, which indicated a violation of the symbiosis of the intestinal microflora. And also in patients in the postoperative period, there was at times anxiety, moodiness, decreased appetite, sometimes refusal to eat, which influenced the quality of life of patients.

There was a lag in physical development, in some cases depletion of the body, sometimes leading to cachexia, which required additional prescription of parenteral nutrition drugs against the background of complex treatment. Of the local complications, maceration of the anorectal skin was most often noted. Some patients developed progressive stenosis of the anus, who had to do devulsion against the background of stimulation therapy. In patients undergoing abdominal-perineal proctoplasty, a frequent complication was weakness of the anal sphincter muscles, against which clinical signs of partial fecal incontinence were found.

Conclusions

1. Analysis of the results obtained shows that surgical interventions performed on the large intestine by traditional methods have drawbacks, which lead to complications that reduce the quality of life of sick children.

2. Improvement of methods of surgical interventions taking into account the anatomical and physiological characteristics of a growing organism allows to reduce the number of complications, which leads to an improvement in the quality of life of sick children.

3. Timely, targeted prescription of antibacterial drugs and infusion therapy in the postoperative period reduces the possibility of complications, including surgical infection in the postoperative wound and sepsis.

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APPLICATION OF NITROXALINE IN PREGNANT WOMEN AND ASPECTS OF LABOR OUTCOME IN WOMEN SUFFERING WITH CHRONIC PYELONEPHRITIS

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Perinatal morbidity and mortality are generally driven extragenital diseases and complications of pregnancy. Studies have shown that perinatal mortality was 9.6%, with than in women treated with chronic pyelonephritis in women's consultation prior to the development of preeclampsia, the figure was 8 times lower than in the group of women who have chronic pyelonephritis was diagnosed only by development of pre-eclampsia.

Key words: pregnancy, chronic pyelonephritis, center of perinatal, infestation of foetus, intraformational turn of urgent maternity, preeclampsia, female consultation.

ПРИМЕНЕНИЕ НИТРОКСАЛИНА У БЕРЕМЕННЫХ И АСПЕКТЫ ИСХОДА РОДОВ У ЖЕНЩИН, СТРАДАЮЩИХ ХРОНИЧЕСКИМ ПИЕЛОНЕФРИТОМ

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✓ Резюме

Перинатальная заболеваемость и смертность чаще всего обусловлены экстрагенитальными заболеваниями и осложнениями беременности. В последние годы ряд авторов отмечают возрастание частоты пиелонефрита во время беременности от 2-3 до 10% (1,2,3) и их уменьшение на фоне применения нитроксалина. При хроническом пиелонефрите во время беременности создаются весьма благоприятные условия для инфицирования плода и развития позднего токсикоза беременных, чем объясняется высокая перинатальная смертность.

Ключевые слова: беременность, хронический пиелонефрит, перинатальный центр, инфицирование плода, нитрофурановый ряд, срочные роды, преэклампсия, женская консультация

ҲОМИЛАДОР АЁЛЛАРДА НИТРОФУРАН ҚАТОРИДАГИ ДОРИ ВОСТАЛАРИНИ ҚЎЛЛАНИЛИШИ ВА СУРУНКАЛИ ПИЕЛОНЕФРИТ БИЛАН ОҒРИГАН АЁЛЛАРДА НАТИЖАЛАРНИНГ АСПЕКТЛАРИ

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✓ Резюме

Хулоса шундан иборатки, аёллар перинатал ўлими 9,6 фоизни ташкил этиб, аёллар маслаҳатхонасида сурункали пиелонефрит билан даволанган аёллар гуруҳида преэклампсия ривожланиши сурункали пиелонефрит билан даволанмаган аёлларга нисбатан 8 баробар паст. Ўтказилган текширувлар шуни кўрсатдики, ҳомиладорларда сурункали пиелонефрит преэклампсия ривожланишида асосий ролни ўйнайди.

Калит сўзлар: ҳомиладорлик, хроник пиелонефрит, перинатал марказ, ҳомила инфекцияланиши, нитрофуран қатор, муддатдаги тузғуқ, преэклампсия, аёллар маслаҳатхонаси.

Relevance

Pyelonephritis is the most common kidney disease, regardless of age, to which women are more susceptible. In pregnant women, the acute form of the disease is diagnosed in 2-10%, most often during the first pregnancy. This is due

to insufficient adaptation mechanisms of the body to changes that occur during pregnancy: immunological and hormonal changes, growth of the uterus and compression of adjacent organs.

The end of the II and the beginning of the III trimester are periods that are important from the point of view of the appearance of pyelonephritis, since it is at this time that the hormonal ratio changes significantly. As for postpartum women, the disease can develop in the first 1-2 weeks after childbirth - this is the time of onsetpostpartum complications.

Causes of occurrence

Distinguish pyelonephritis in pregnant women, women in labor and postpartum women. For these forms, a special term is often used - gestational pyelonephritis, with which some features of the development and course of the disease are associated.

Pathogens:

- in pregnant women, it is *Escherichia coli*, *Proteus* or *Enterobacteriaceae*;
- in puerperas, the causative agent is most often *enterococcus* or *E. coli*.

Also, the causes of pathology can be *staphylococci*, *streptococci*, *Pseudomonas aeruginosa*, *Candida fungi*.

Types of pyelonephritis

By the duration of the course:

- Acute - appears suddenly, on average lasts up to 3 weeks. There are several types: purulent, serous, necrotic;
- Chronic - develops after an acute one, is characterized by a sluggish course, periodic exacerbations (relapses). Phases of the chronic process: active inflammation, followed by a latent phase (the disease develops, but without pronounced physical and laboratory signs), then remission occurs (symptoms disappear) with a tendency to relapse. The recurrent type is characterized by an exacerbation with severe symptoms, with a frequency of 1-2 times a year, and ends in remission.

Perinatal morbidity and mortality are most often caused by extragenital diseases and complications of pregnancy. In recent years, a number of authors have noted an increase in the frequency of pyelonephritis during pregnancy from 2-3 to 10% (1, 2, 3) and their decrease in the presence of nitroxaline. In chronic pyelonephritis during pregnancy, very favorable conditions are created for infection of the fetus and the development of late toxicosis of pregnant women, which explains the high perinatal mortality.

The purpose of our work was the use of nitroxaline in pregnant women and aspects of the outcome of labor in women with chronic pyelonephritis, the study of the characteristics of

the course of labor in women with chronic pyelonephritis, the choice of methods and timing of treatment to reduce the percentage of complications in the mother and newborn.

Research materials and methods

In this regard, we studied the course of pregnancy and the outcome of childbirth in 31 women with chronic pyelonephritis:

1.1 - group - chronic kidney disease in 23 patients was established in the conditions of an antenatal clinic.

2.2 - group - examined in the hospital - 8 pregnant women. Pregnant women of the 1st group received on an outpatient basis from 1 to 3 courses of complex treatment of chronic pyelonephritis, including diet and vitamin therapy, antibiotics, and nitrofurantoin preparations. The course of treatment lasted from 1 to 3 weeks.

In 9 women, pyelonephritis was detected for the first time during this pregnancy, in 22 - the duration of the disease varied from 1 to 5 years. In 12 patients, chronic pyelonephritis was diagnosed in the 2nd trimester of pregnancy, in 19 - in the 3rd trimester, in 8 pregnant women, chronic pyelonephritis was first diagnosed at 36-38 weeks in the hospital, where they were treated for preeclampsia.

Chronic inflammatory kidney disease in pregnant women was revealed on the basis of a general clinical examination and laboratory urine tests using the Nechiporenko or Addis-Kakovsky method.

When studying the course of pregnancy in 31 women, it was found that the most frequent and severe complications associated with pyelonephritis was preeclampsia [4,7,9]. Thus, pre-eclampsia occurred in 21 (67.7%) pregnant women, while in 18 women its signs appeared early (from the 26th week of pregnancy) and were characterized by the presence of edema and proteinuria in the 3rd trimester, they were joined by hypertension.

In the group of women who received complex therapy for chronic pyelonephritis in the 2nd and 3rd trimester, a milder course of preeclampsia was observed and proteinuria quickly disappeared.

In the case when chronic pyelonephritis was diagnosed after the development of preeclampsia, as a rule, it was severe. At the same time, early onset of pre-eclampsia and the lack of the proper effect of the treatment were characteristic, proteinuria persisted for a long time, even after childbirth.

Pregnancy ended in urgent labor in 19 women, premature in 12.

Due to the severe form of preeclampsia,

which is difficult to respond to therapy, early delivery at 34-36 weeks of gestation was performed in 12 women.

Result and discussion

Childbirth was complicated by partial premature detachment of the normally located placenta in 3 (9.7%) women, weakness of labor in 3 (9.7%) women. Bleeding in the III and early postpartum period was observed in 2 (6.5%) women.

Caesarean section was performed in 5 pregnant women for severe preeclampsia. With an Apgar score of 4-5 points, 4 children were born, 6 points - in 9 children, 8 points - in 16 children. Higher scores on the Apgar scale were mainly in children born to mothers who received 2-3 courses of complex treatment during pregnancy.

Stillbirth occurred in 3 women in childbirth with chronic pyelonephritis. 2 of them had a combined form of pre-eclampsia. On days 4-5, 2 premature infants died of pneumonia. Severe malnutrition was observed in 2 stillborn and 2 dead newborns.

Conclusions

Thus, perinatal mortality was 9.6%, and in the group of women who underwent treatment of chronic pyelonephritis in the antenatal clinic before the development of preeclampsia, this indicator was 8 times lower than in the group of women in whom chronic pyelonephritis was detected only with the development of preeclampsia. Studies have shown that chronic pyelonephritis plays an important role in the development of pre-eclampsia in pregnant women.

In the prevention of these complications, early detection of chronic pyelonephritis and its rational treatment are of paramount importance. To this end, in the antenatal clinic, a group of pregnant women "threatened" for latent pyelonephritis should be identified and subjected to an in-depth examination:

- 1) suffering from chronic tonsillitis,
- 2) have undergone preeclampsia in previous pregnancies,
- 3) with an indication of a history of kidney disease.

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FARMAKOGENELOGICAL AND MORPHOLOGICAL FEATURES OF STOMACH CANCER DURING ENDOSCOPIC EXAMINATION

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✓ Resume

Stomach cancer is one of the most common oncological diseases, occupying a significant place in the structure of morbidity and mortality (V.I. Chissov, V.V. Starinsky, 2002; V.M. Merabishvili, 2011). From stomach cancer in the world annually kills up to 800,000 people. Among the oncological morbidity of the population of the Russian Federation, stomach cancer takes the 2nd place, second only to lung, trachea and bronchial tumors (V.I. Chissov; V.V. Starinsky; B.N. Kovalev; JI.B. Remennik, 2006). According to the Ministry of Health of the Republic of Uzbekistan, gastric cancer ranks second after breast cancer in frequency of occurrence. Unfortunately, in more than 50% of cases, the primary detection of these patients occurs in advanced stages, when their treatment is quite difficult and is in most cases palliative in nature, aimed at some increase in life expectancy and improvement of its quality. (2018 year)

Key words: stomach cancer, morphological features, gastroenterogical features, endoscopy, cancer of breast, malignancy.

ФАРМАКОГЕНЕТИЧЕСКИЕ И МОРФОЛОГИЧЕСКИЕ ОСОБЕННОСТИ РАКА ЖЕЛУДКА ПРИ ЭНДОСКОПИЧЕСКОМ ИССЛЕДОВАНИИ

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✓ Резюме

Рак желудка является одним из наиболее распространенных онкологических заболеваний, занимая значительное место в структуре заболеваемости и смертности (В.И. Чиссов, В.В. Старинский, 2002; В.М. Мерабишвили, 2011). От рака желудка в мире ежегодно погибает до 800 000 человек. Среди онкологической заболеваемости населения Российской Федерации рак желудка занимает 2-е место, уступая только опухолям легкого, трахеи и бронхов (В.И. Чиссов; В.В. Старинский; Б.Н. Ковалев; JI.B. Ременник, 2006). По данным Министерства Здравоохранения Республики Узбекистан по частоте встречаемости рак желудка стоит на втором месте после рака молочной железы. К сожалению в более чем 50 % случаев первичная выявляемость этих пациентов происходит в запущенных стадиях, когда лечение их довольно сложно и носит в большинстве случаев паллиативный характер, направленный на некоторое увеличение продолжительности жизни и улучшении её качества. (2019 год)

Ключевые слова: рак желудка, морфологические особенности, гастроэнтерологические особенности, эндоскопия, рак молочной железы, малигнизация.

ENDOSKOPIK TEKSHIRUV PAYTIDA OSHQOZON SARATONINING FARMAKOGENETIK VA MORFOLOGIK XUSUSIYATLARI

Xatamova M.T.

Abu Ali ibn Sino nomidagi Buxoro davlat tibbiyot instituti

✓ Resume

Oshqozon saratoni eng ko'p uchraydigan onkologik kasalliklardan biri bo'lib, kasallik va o'limning tuzilishida muhim o'rinni egallaydi (V.I. Chissov, V.V. Starinsky, 2002; V.M.

Merabishvili, 2011). Dunyoda har yili oshqozon saratoni kasalligidan 800000 kishi halok bo'ladi. Rossiya Federatsiyasi aholisining onkologik kasalligi orasida oshqozon saratoni 2-o'rinni egallaydi, o'pka, traxeya va bronxial o'smalardan keyin ikkinchi o'rinni egallaydi (V.I. Chissov; V.V. Starinskiy; B.N. Kovalev; JI.B. Remennik, 2006). O'zbekiston Respublikasi Sog'liqni saqlash vazirligining ma'lumotlariga ko'ra, oshqozon saratoni yuzaga kelish chastotasi bo'yicha ko'krak saratonidan keyin ikkinchi o'rinda turadi. Afsuski, 50% holatlarda bu bemorlarni birlamchi aniqlash ilg'or bosqichlarda amalga oshiriladi, bunda davolash ancha murakkab va ko'p hollarda umr ko'rish davomiyligini oshirish va uning sifatini yaxshilashga qaratilgan palliativ xarakterga ega. (2018 yil)

Kalit sozlar: oshqozon saratoni, morfologik xususiyatlari, gastroenterologik xususiyatlari, endoskopiya, ko'krak bezi saratoni, malign neoplazmalar

Relevance

Stomach cancer usually develops in cells that produce mucous secretions, these cells are located in the lining of the stomach. This type of cancer is called adenocarcinoma.

Over the past few decades, the incidence of stomach cancer has been declining worldwide. At the same time, cancer in the area where the upper stomach (cardia) meets the lower esophagus is becoming much more common.

What are the symptoms of stomach cancer?

Signs and symptoms of gastroesophageal cancer and stomach cancer:

- Feeling bloated after eating
- Feeling full after eating small amounts of food
- Severe, persistent heartburn
- Severe, frequent stomach upset
- Unexplained persistent nausea
- Abdominal pain
- Frequent vomiting, usually associated with food intake
- Unintentional weight loss
- Fatigue

Cancer occurs when the number of acquired mutations in the DNA of a certain population of cells, caused by various reasons, allows them to divide uncontrollably and "hide" from the immune system.

The accumulating cancer cells form a tumor that is able to invade nearby structures. Cancer cells can separate from the tumor and spread throughout the body. This is called metastasis.

Although the underlying cause of gastric cancer is still unclear, there is a clear understanding of the risk factors and predisposing factors.

In recent years, the evidence base for the association of stomach cancer with infection with the bacterium *Helicobacter pylori*, which often causes chronic gastritis and gastric ulcer.

There is a proven link between a diet high in salty and smoked foods and cancer located in the main body (body) of the stomach. As the use of refrigeration technology to preserve food has increased worldwide, the incidence of stomach cancer has declined.

It remains unclear exactly which key factor causes gastroesophageal cancer or cancer of the body of the stomach, so it cannot be prevented. But you can take steps to reduce your risk of developing this formidable disease.

To do this, you need to make small changes in your daily life:

- Monitor your weight. If you have signs of obesity, consult nutritionist on eating behavior change.
- Try to be physically active most of the days of the week. Regular exercise has been linked to a lower risk of stomach cancer.
- Eat more fruits and vegetables. Try to add more fruits and vegetables to your diet every day. Not only the quantity is important, but also the variety, it has been proven that the consumption of 5 or more types of vegetables and / or fruits during the day significantly reduces the risk of stomach cancer.
- Reduce your intake of salty and smoked foods.
- Stop smoking. If you smoke, quit. If you don't smoke, don't start. Smoking increases the risk of not only stomach cancer but many other cancers as well. Quitting smoking on your own can be very difficult, you can contact the doctors at the Rassvet Clinic, they will provide you with practical advice and information about existing medications to make it easier to quit smoking.

Stomach cancer occurs in a wide age range - from 19 to 80 years with the highest incidence peak at 50-70 years with a predominance (2 or more times) of male patients. For initial cancer, the typical age is considered to be from 40 to 60 years.

According to summary statistics, the 5-year survival rate after treatment remains low - 9.6 - 11.7% (Y. Adachi, 1996), the 10-year survival rate does not exceed 12.8% (V.M. Merabishvili, 2001).

More significant differences were found in the incidence of early forms of gastric cancer, about 50% in Japan, from 10 to 20% in Europe, 8 to 26% in the United States (Muto Terukazu, 1995). They primarily depend on the accepted organizational forms of examining the population, the introduction into widespread practice of the endoscopic diagnostic method, the possibility of a qualified morphological study of targeted material in combination with modern X-ray techniques and their pharmacogenetic characteristics. environment can provide the necessary complex of morphological prognostic signs to clarify the characteristics of the pathological process and their pharmacogenetic features

Thus, the data presented indicate the need to study a wide range of interrelated issues, the solution of which will clarify the clinical significance of a number of morphological signs of stomach cancer, which, in turn, will make it possible to more reasonably judge the nature of the local process, improve diagnostics, adjust the treatment tactics of patients and predict the course of the disease. and their pharmacogenetic features.

The aim of this study was to increase the efficiency of the use of pharmacogenetic and morphological signs in endoscopic examination for early diagnosis, clinical assessment and prognosis in patients with gastric cancer.

Materials and methods

The study included 210 patients who applied for advice to the outpatient department of the Bukhara branch of the RSNPMC Oncology and Radiology and underwent Fibrogastroscope (FGS) in 2018. Of these, 109 (51.9% of cases) patients were diagnosed with gastric cancer of different nature and degree of differentiation. The age of the patients ranged from 23 to 62 years, the average age was 47.8 +/- 023 years. Of these, the rural population accounted for 57.3%, urban dwellers accounted for 43.7%. Among the patients, 66% (72 men) were men, 34% (37 women) were women. Anamnesis of the disease was studied in all patients, an endoscopic examination was performed - FGS, followed by a

histological examination of the biopsy specimen. The indications for FGS were the following: prolonged epigastric pain (in the abdomen), heartburn, belching, nausea and vomiting, difficulty swallowing food, lack of appetite and sudden weight loss, hemoptysis and to establish the reasons: reflux disease, gastrointestinal bleeding, cancer and their pharmacogenetic features Same FGS was performed as directed by the attending physician in the postoperative period to monitor the patient's condition after surgery on the digestive organs and to monitor the effectiveness of conservative treatment. If an affected area is suspected, a biopsy sample was taken with subsequent histological examination of the material and their pharmacogenetic features

Results and discussion

Studies have shown that 23% of patients had a hereditary predisposition, 42% of patients had nutritional errors - excessive enthusiasm for smoked, spicy, salty, fried (overcooked) and canned food, long-term stored foods. 57% of patients indicated a history of long-term stomach diseases: gastritis (with low acidity), stomach ulcers and polyps; 7% of patients underwent various operations on the stomach. 12% of patients had contact with carcinogenic substances such as asbestos, nickel, etc. Every fourth patient (25%) indicated frequent respiratory diseases, various types of anemia and immunodeficiency states. The presence of bad habits such as alcoholism and smoking was revealed in 31%. Esophagogastroduodenoscopy (EGDS) was performed with a special instrument, a flexible endoscope, which was a thin, flexible hose with illumination and a video camera at the end, which was inserted through the mouth into the lumen of the esophagus, stomach and duodenum. This method allows you to sightly examine all parts of the esophagus, stomach, duodenum 12, including with a strong increase to identify foci of altered mucous membranes and take material for biopsy and histological / cytological studies, and their pharmacogenetic features The structure of the stomach tumors were very different. The structure of tumor cells was determined by its "histological type". Most often (in 63.3% of cases), ulcerated carcinoma with saucer-shaped raised and well-defined edges, which is visually indistinguishable from a stomach ulcer, was diagnosed.

Table 1 shows data on the degree of differentiation of tumors.

The degree of differentiation of tumors

Table No. 1

No.	Nosology	Number of patients	%
1.	Cancer in situ	7	6.4
2.	G -1	23	21.1
3.	G -2	48	44
4.	G-3	27	24.8
5.	G-4	four	3.7
6.			

Diffuse-infiltrative cancer (skirr), which during endoscopy is characterized by endophytic growth, diffuse germination and infiltrating the

submucosal layer, captures significant areas of the stomach wall. In our study, this type of cancer was diagnosed in 1 case (0.91%).

In the table. No. 2 shows the data on the nature of the tumors identified during endoscopic examination.

Table No. 2

The nature of the tumor on endoscopic examination

No.	The nature of the tumor	Abs.	%
1.	Adenocarcinoma	69	63.3
2.	Squamous cell carcinoma	27	24.7
3.	Mucinous adenocarcinoma	2	1.83
4.	Persistent cell carcinoma	one	0.91
5.	Cyrrhoidal cancer	one	0.91
6.	Cancer in situ	7	6.42

Conclusions

A new stage in the fight against cancer is aimed at creating a modern system for the prevention and early detection of cancer and their pharmacogenetic features. The adopted resolution "On measures to further develop the oncological service and improve oncological care for the population of the Republic of Uzbekistan for 2017-2021" by the President of the Republic opens a new stage in the fight against cancer, focused primarily on covering the needs of the population in high-tech treatment methods, as well as creating modern system of prevention and early detection of oncological diseases and their pharmacogenetic features. The problems of morphogenesis and classification of gastric cancer are closely related to the search for clinical and morphological characteristics that could have prognostic value and, to a certain extent, influenced the choice of optimal treatment options, both initial and common, and their pharmacogenetic characteristics. This dictates the need for further searches for modern diagnostic markers and the continuation of scientific research in this direction.

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SYNTHESIS OF METAL NANOPARTICLES USING PLANTS: AN ECOFRIENDLY APPROACH

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✓ Resume

Synthesis of metal nanoparticles using plants by green synthesis technology is biologically safe, environment-friendly and cost-effective. Plant contains various biomolecules such as alkaloids, phenolics, terpenoids, saponins, co-enzymes. These phytoconstituents are present in various parts of plant such as leaves, stem, roots, flower, bark. It has been found that these phytocomponents act as reducing and stabilizing agent in the production of metallic nanoparticles such as silver, gold, copper, platinum, zinc oxide etc. These plant mediated nanoparticles are used as antimicrobial, antifungal and a potential remedy for diseases like cancer, HIV, malaria, hepatitis etc.

Key words: Nanotechnology, MNPs, Plant extract, Drug delivery, Nanoparticle biosynthesis

СИНТЕЗ МЕТАЛЛИЧЕСКИХ НАНОЧАСТИЦ НА РАСТЕНИЯХ: ЭКОЛОГИЧЕСКИЙ ПОДХОД

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✓ Резюме

Синтез нано частиц металлов с использованием растений по технологии зеленого синтеза является биологически безопасным, экологически чистым и экономичным. Растение содержит различные биомолекулы, такие как алкалоиды, фенолы, терпеноиды, сапонины, коферменты. Эти фито составляющие присутствуют в различных частях растения, таких как листья, стебель, корни, цветы, кора. Было обнаружено, что эти фито компоненты действуют как восстанавливающий и стабилизирующий агент при производстве металлических нано частиц, таких как серебро, золото, медь, платина, оксид цинка и т.д. Эти опосредованные растениями нано частицы используются как противомикробные, противогрибковые и потенциальное средство от таких заболеваний, как рак, ВИЧ, малярия, гепатит и др.

Ключевые слова: нано технологии, МНЧ, растительный экстракт, доставка лекарств, биосинтез нано частиц.

O'SIMLIKLARDAN FOYDALANADIGAN METALL NANOZARRACHAAR SINTEZI: ECOLOGIK YONDASHUV

Dhir Sarika, Dutt Rohit, Singx Mxayer

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✓ Rezyume

Yashil sintezi texnologiyasi yordamida o'simliklardan foydalangan holda metall nanozarralarni sintezi biologik jihatdan xavfsiz, atrof muhitga zarar keltiradigan va tejamkor hisoblanadi. O'simlik tarkibida alkaloidlar, fenollar, terpenoidlar, saponinlar, kofermentlar kabi turli xil biomolekulalar mavjud. Ushbu fitokonstitentsiyalar o'simlikning barglari, poyasi, ildizlari, gullari, po'stlog'i kabi turli

qismlarida mavjud. Ushbu fitokomponentlar kumush, oltin, mis, platina, rux oksidi va boshqalar kabi metall nanozarralarni ishlab chiqarishda kamaytiruvchi va stabillashtiruvchi vosita sifatida faoliyat yuritishi aniqlandi. saraton, OIV, bezgak, gepatit va boshqa kasaliklarda ham qo'llaniladi.

Kalit so'zlar: Nanotexnologiya, MNPlar, o'simlik ekstrakti, giyohvand moddalarni etkazib berish, nanopartikullar biosintezi

Relevance

Nanotechnology is an emerging technology with wealth of applications. Recently these nanoparticles have attracted considerable attention in various fields such as sensing, imaging, biomedical devices, and pharmaceuticals. NP are atomic aggregate with dimension between 1-100nm that can drastically modify their physicochemical properties compared to the bulk material. These nanomaterials have potential applications in various areas such as treatment, development surgical nanodevices, diagnosis, drug delivery. Due to their large surface area and wider bandgap between conduction band and valence these nanomedicines, show atom like properties, which results from higher surface energy. Nanomedicine facilitates the production and application of materials to interact with the human body at a molecular level with a very high degree of specificity, this can potentially be translated into tissue-specific targeted cellular clinical applications, designed to achieve maximal therapeutic efficacy with minimal to no side effects.

Metal nanoparticles (MNPs) of Gold (Au), silver (Ag), platinum (Pt), lead (Pb), copper (Cu), cadmium (Cd), iron (Fe) and other metal oxides such as titanium oxide (TiO), zinc oxide (ZnO), belong to engineered type of nanoparticles and have not only unique physical and chemical properties but also different biological activities which could be attributed to their small size and large surface area. Different chemical and biological methods are being used to synthesize these nanoparticles. Most commonly metal nanoparticles are formed by the chemical reduction of metal ions from salt solution using strong base which act as reducing agent such as sodium hydroxide or sodium borohydride followed by addition of stabilizing agent called as capping agent or stabilizer. The reagents used, as reducing agents and the solvent, which are used, are commonly toxic substances, which could be harmful for the environment and human health. This lead to the search of an alternative method for the synthesis of metal nanoparticles. One of these alternative is using biological system for the

synthesis of metal nanoparticles which is based on the principle of green chemistry. Prokaryotic and eukaryotic organisms including plants, animals and microorganism are used to synthesize metal nanoparticles. Primary and secondary metabolite causes reduction of metal ion resulting in the formation of metal nanoparticles. These reducing agents or surrounding molecules form coating on the outer surface of metal nanoparticle preventing them to agglomerate. So the metal nanoparticles obtained by green synthesis are eco-friendly, easy rapid and simple to produce, biocompatible and biodegradable gives high yield in low cost.

Important aspect concerning green synthesis of MNPs by plants is the fact that each part of plant (leaves, fruit, seed, root, barks) have different phytochemical component and should be considered separately. Metal nanoparticles were synthesized using different extract from different plants and different parts using metal salts producing nanoparticles with different compositions, sizes, shapes and activities. The metal nanoparticles using plants are spheres and triangles. The size range from 15-50nm in diameter. Leaves extract is the most common choice for the synthesis of metal nanoparticles but other parts of plant such as seed, bark, flower, fruit, tuber and roots have also been reported. Most of the metabolites are present in the leaves so they are most commonly used and also because they are renewable, abundant and non-destructive.

Synthesis of nanoparticles: The use of plant materials for the synthesis of nanoparticles could be more advantageous as it is economical and it also does not require elaborate processes. The cocktail of phytochemicals which are present in plants such as phenolic acids, sugars, terpenoids, alkaloids, polyphenol, flavonoids and proteins that play vital role in this biological reduction and stabilization of metals like Au (III) salts to Au (0) or Ag (I) salts to Ag (0) to metal nanoparticles. The basic principle in the formation of these nanoparticles is that some of the phytoconstituents present in the plant extract contain these functional group (-COOH, C=O, NH₂, SH and OH) which

reduces the metal ion into metal atoms which are nanosized and are called nanoparticles and these nanoparticles adsorb various phytoconstituents on its surface which have various biological activities. Thus the secondary metabolites act as reducing, stabilizing and capping agent. So these metal nanoparticles with phytoconstituents adsorbed on its surface because of its large surface area and small particle size are more effective, stable and bioavailable than the pure plant extract. NPs synthesized via green methods show excellent

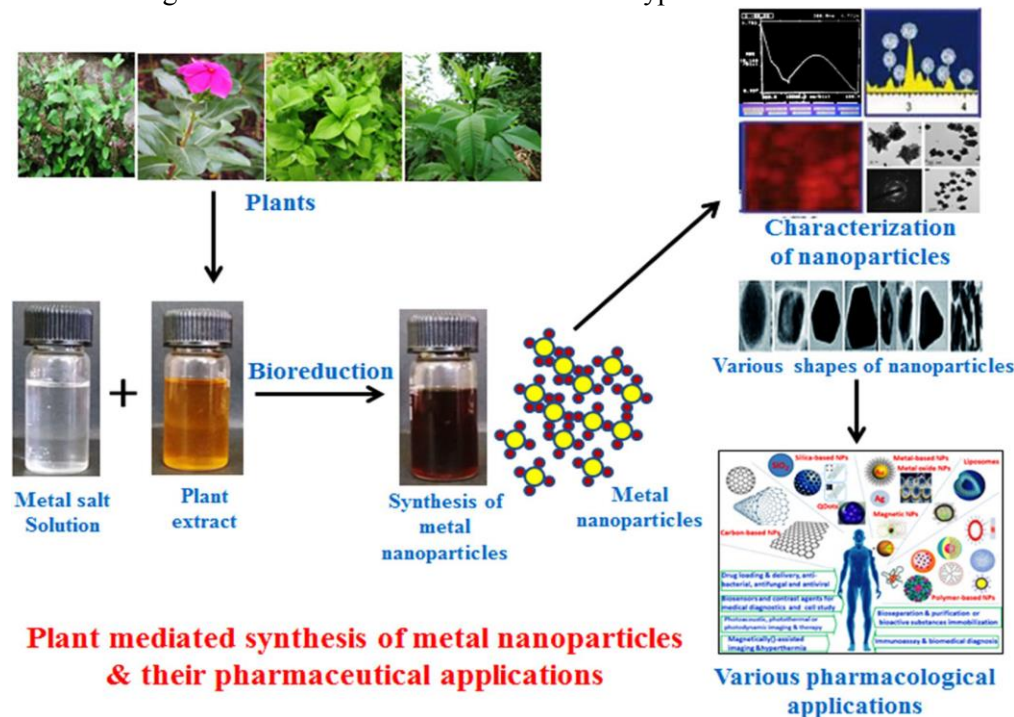
antibacterial effects, antifungal effects, anti-cancer activity, anti-inflammatory and anti-diabetic activity.

Silver: The biochemical reaction of AgNO_3 with plant extract leads to AgNPs

$\text{Ag}^+ + \text{NO}_3^- + \text{plant extract} \rightarrow \text{Ag}^0\text{NPs} + \text{byproducts}$

Gold: The proposed reaction is that the Au^{3+} is reduced to Au^0 in presence of phytochemicals

$\text{HAuCl}_4 \cdot 4\text{H}_2\text{O} + \text{Plant extracts} \rightarrow \text{Au}^0\text{NPs} + \text{byproducts}$



Characterization of Nanoparticles synthesized from plants:

Characterization is essential for determining morphological and structural properties of metal nanoparticles. The various techniques which are used for the characterization of metal nanoparticles are X-ray diffraction (XRD) for identification

Characterization is required for determination of the structural and morphological properties of metal NPs. The major techniques used for the characterization of metal NPs are X-ray diffraction (XRD) for identification of the crystalline or amorphous natures of metal NPs, scanning, and transmission electron microscopy (SEM) for evaluation of size and morphology of synthesized NPs; Fourier transform infrared (FTIR) is used for identification of functional groups used in reduction of metal salt. For each of the characterization techniques, a different method of sample preparation is required.

Factors affecting biological synthesis of metal nanoparticles: The morphological character of the prepared nanoparticles can be changed by various parameters such as pH, temperature, reaction time and reactant concentration. These factors may be taken into consideration while preparing metal nanoparticles as they play an important role in optimization of metal nanoparticles.

pH: Size and shape of nanoparticles varies with the pH of solution, large size particles are produced in acidic medium. Further, the functional group easily approaches for particle nucleation in the extract at pH 3 or 4 as compared to pH 2 at which only fewer functional groups are available leading to particle aggregation to form larger nanoparticles. An increased number of spherical

nanoparticles were synthesized using *Cinnamom zeylanicum* bark extract at pH greater than 5.

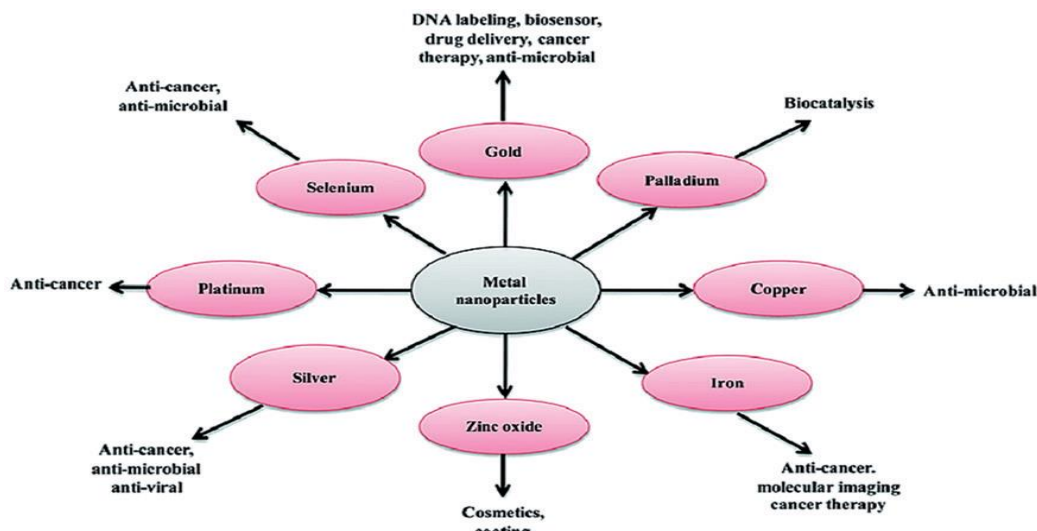
Reactant concentration: The formation of metallic nanoparticles is affected by the concentration of the phytoconstituents present in the extract. The shape of silver and gold nanoparticles is affected by the amount of phytoconstituent present in the reaction medium. Exposure of chloroauric acid to increased concentration of extract resulted in synthesis of spherical nanoparticles rather than triangular. Nanoparticle size can be changed between 50nm to 350nm by using different concentration of the extract. Triangular, spherical, decahedral, hexagonal shapes of silver nanoparticles were produced by changing the concentration of *Placanthu samboinicus* leaf extract.

Reaction Time: The reaction time is also very important factor in synthesizing nanoparticles. Rapid colour change was seen in 2mins when pineapple extract was used for silver nanoparticle

synthesis and the shape was found to be spherical with the size of 12nm. Size of the silver nanoparticles changed ranging from 10-35nm when there was increase in reaction time from 30mins to 4 hrs using *Azadirachta indica* leaf extract.

Reaction temperature: Reaction temperature also plays very important role in determining the shape, size and yield of the synthesized nanoparticles by using plants. At 25°C the peel extract of *Citrus sinensis* produced the nanoparticles with a particle size of around 35nm. And as the temperature was increased to 60°C the particle size of nanoparticles decreased to 10nm. The high temperature increases the rate of formation of gold nanoparticles. The spherical gold nanoparticles were formed at lower temperature whereas rod like or plate like nanoparticles are formed at high temperature. The reaction rate increases whereas the particle size saw decreases with rise in reaction temperature to 60°.

Pharmacological applications of Metallic nanoparticles:



Nanoparticles have vast application in physicochemical and biomedical field. They are used for drug delivery, bio-imaging, biomolecular recognition and biosensing. Both gold and silver nanoparticles have been found to have broad spectrum antimicrobial activity against pathogens. Silver nanoparticles are larvicidal against

filariasis and malaria vectors. Copper and copper oxide nanoparticles have antimicrobial, antibacterial, anticancer and antioxidant activity against some pathogenic strains. Titanium dioxide and zinc oxide have antibacterial, adulticidal and larvicidal properties.

Biosynthesis of nanoparticles using plant extract:

<i>Brassica rapa</i>	Antifungal	Ag	Narayanan et al., 2014
<i>Euphorbia milii</i>	Muscle relaxant	Au	Islam et al. 2015
<i>Salix alba</i>	Antifungal	Au	Islam et al. 2015
<i>Sesbania grandiflora</i>	Cytotoxicity	Au	Koduru M et al 2018
<i>Ruta graveolens</i>	Antimicrobial	Ni, ZnO	Lingaraju, K. et al 2016
<i>Psidium guajava</i>	Cytotoxicity	TiO	Santhoshkumar, T et al 2014
<i>Galaxaura elongata</i>	Biological activities	Au	Abdel-Raouf, Net al 2017
<i>Gardenia jasminoides</i>	Antibacterial	Fe, Pd	Naseem, T et al 2015
<i>Gloriosa superba</i>	Catalytic	CuO	Naika, H.R et al 2015
<i>Punica granatum</i>	Antidiabetic	Ag	Rijuta et al 2018
<i>Lantana trifolia</i>	Antibacterial	Ag	Edwin Shigwenya Madivoli et al 2020
<i>Mansoa alliacea.</i>	Arthritis pain	Au	Hengyuan An et al 2019
<i>Ageratum conyzoides</i>	Antimicrobial	Fe	Edwin Shigwenya Madivoli 2019
<i>Rhododendron arboreum.</i>	Antimicrobial	MgO	Ajay Singh et al 2019

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**PREVENTION OF IODINE DEFICIENCY STATES DURING GESTATION AND
BREASTFEEDING**

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Bukhara Medical Institute named after Abu Ali ibn Sino

✓ **Resume**

The aim of the study was to assess the significance of iodine prophylaxis in pregnant and lactating women. We studied 200 women, including 100 pregnant women and 100 postpartum patients living in an endemic area. The widespread implementation of the antenatal and postnatal iodine prophylaxis program, which implies the intake of iodine by pregnant and lactating women, will significantly reduce the pathology of pregnancy and improve the mental and physical health of the younger generation. Prevention of iodine deficiency during pregnancy is an effective measure to protect the body of the mother and child.

Keywords: pregnancy, iodine preparation, iodine prophylaxis, pregnant and lactating women

**HOMILADORLIK VA EMIZIKLIK DAVRDA YOD TANQISLIGI HOLATLARINING
OLDINI OLISH**

Negmatullaeva M.N., Tuksanova D.I., Tukhtaeva M.A.

Abu Ali ibn Sino nomidagi Buxoro tibbiyot instituti

✓ **Rezume**

Tadqiqotning maqsadi homilador va emizikli ayollarda yod profilaktikasining ahamiyatini baholash. Biz 200 ayolni, shu jumladan, 100 homilador ayolni va tug'ruqdan keyingi 100 bemorni endemic hududda yashashini o'rganib chiqdik. Homilador va emizikli ayollar tomonidan yod iste'mol qilishni nazarda tutadigan antenatal va tug'ruqdan keying yod profilaktikasi dasturining keng tatbiq etilishi homiladorlik patologiyasini sezilarli darajada kamaytiradi va yosh avlodning aqliy va jismoniy sog'lig'ini yaxshilaydi. Homiladorlik davrida yod etishmasligining oldini olish ona va bola tanasini himoya qilishning samarali chorasini hisoblanadi.

Kalit so'zlar: homiladorlik, yod preparatlar, yod profilaktikasi, homilador va emizikli ayollar

**ПРОФИЛАКТИКА ЙОДДЕФИЦИТНЫХ СОСТОЯНИЙ В ПЕРИОД ГЕСТАЦИИ И
ГРУДНОГО ВСКАРМЛИВАНИЯ**

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✓ **Резюме**

Цель исследования оценить значимость йодной профилактики у беременных и кормящих женщин. Нами были исследованы 200 женщин, в том числе 100 беременных и 100 послеродовых пациенток, проживающих в эндемической зоне. Широкое внедрение программы антенатальной и постнатальной йодной профилактики, подразумевающей прием беременными и кормящими женщинами препарата йода, позволит значительно снизить патологию беременности и улучшить психическое и физическое здоровье подрастающего поколения. Профилактика йод дефицита во время беременности – это эффективная мера защиты организма матери и ребенка.

Ключевые слова: беременность, йодный препарат, йодопрофилактика, беременные и кормящие женщины.

Relevance

The prevalence of iodine deficiency states is quite large all over the world. According to the WHO, about 30% of the world's population is at risk of developing iodine deficiency diseases. Iodine deficiency diseases (IDD) are the most common non-infectious pathology in the world: 1,570 million people are at risk of developing IDD, including more than 500 million people live in regions with severe iodine deficiency and a high prevalence of endemic goiter. In our Republic of Uzbekistan, the problem of iodine deficiency is extremely relevant, since in many territories of the country there is a lack of iodine in water, soil and food of local origin [1,2,6].

Iodine is an essential element for the synthesis of thyroid hormones and adequate iodine supply is a guarantee of its normal structure and function. Dysfunction of the thyroid gland in pregnant women, including with iodine deficiency, can lead to preeclampsia, chronic intrauterine fetal hypoxia, threatened abortion, and fetal malformations. The physiological need during pregnancy, breastfeeding in childhood increases, and the body needs additional intake of iodine [7,11].

The spectrum of iodine deficiency diseases is very wide and, in addition to the pathology of the thyroid gland, it includes a number of gynecological, obstetric and neurological diseases. Moreover, the most serious conditions associated with iodine deficiency are associated with intrauterine fetal developmental disorders [3,9,10]. Iodine deficiency is a global problem in countries where this element is lacking in the composition of the earth. Although today we do not give this the necessary attention, such a condition in many cases leads to irreparable consequences such as miscarriage.

Iodine is an integral part of the thyroid hormones, thyroxine (T_4) and tri-iodothyronine (T_3), necessary for normal growth and development. An adequate supply of cerebral T_3 , generated in the fetal brain from maternal free T_4 (fT_4), is needed by the fetus for thyroid hormone dependent neurodevelopment, which begins in the second half of the first trimester of pregnancy. Around the beginning of the second trimester, the fetal thyroid also begins to produce hormones but the reserves of the fetal gland are low, thus maternal thyroid hormones contribute to total fetal thyroid hormone concentrations until birth. In order for pregnant women to produce enough thyroid hormones to meet both her own and her baby's requirements, a 50% increase in iodine intake is recommended [21,22]. A lack of iodine in the diet may result in the mother

becoming iodine deficient, and subsequently the fetus. In iodine deficiency, hypothyroxinemia results in damage to the developing brain, which is further aggravated by hypothyroidism in the fetus. The most serious consequence of iodine deficiency is cretinism, characterised by profound mental retardation.

Iodine is essential for the production of the thyroid hormones, thyroxine (T_4) and the 3,5,3'-triiodothyronine (T_3), which are vital for normal growth and development particularly of the brain and central nervous system. Maternal thyroid hormones are found in the embryonic cavities ~4 weeks after conception despite the placenta acting as a barrier designed to prevent excessively high levels of free T_4 (fT_4) and T_3 from reaching the fetus before they are needed [1,2,13,14,20]. Thyroid hormones are not believed to play a role in very early fetal development as studies have shown that nuclear receptors for thyroid hormones are only present in the fetal brain from ~8–9 weeks gestation reaching adult levels by 18 weeks gestation [2,15,17]. Before midgestation, the mother is the only source of cerebral T_3 , which is generated in the fetal brain by type II 5'-iodothyronine deiodinase from maternal T_4 .

There is unequivocal evidence that severe iodine deficiency in pregnancy impairs brain development in the child. However, only two intervention trials have assessed neurodevelopment in children of moderately iodine deficient mothers finding improved neurodevelopment in children of mothers supplemented earlier rather than later in pregnancy; both studies were not randomised and were uncontrolled. Thus, there is a need for well-designed trials to determine the effect of iodine supplementation in moderate to mildly iodine deficient pregnant women on neurodevelopment in the child.

Dysfunction of the thyroid gland leads to serious complications of pregnancy: miscarriages, stillbirth, and fetal anomalies. Thyroid hormones play an important role in the development of the fetus: fetal growth, ossification processes, the formation of the central nervous system, the maturation of the lung and renal tissue, the formation of the immune system [4,5,8,16,18,19].

Pregnant and lactating women have the greatest risk of developing iodine deficiency disorders, since the need for iodine during this period increases several times. Adequate intake of iodine by a woman during pregnancy is a reliable measure for the prevention of thyroid disorders and a prerequisite for the normal development of the fetus and newborn. Iodine is an essential element

for the synthesis of thyroid hormones and adequate iodine supply is a guarantee of its normal structure and function.

Dysfunction of the thyroid gland in pregnant women, including with iodine deficiency, can lead to preeclampsia, chronic intrauterine fetal hypoxia, threatened abortion, and fetal malformations. The physiological need during pregnancy, breastfeeding in childhood increases, and the body needs additional intake of iodine.

Iodine is required for thyroid hormone synthesis. Because of increased thyroid hormone production, increased renal iodine excretion, and fetal iodine requirements, dietary iodine requirements are higher in pregnancy than they are for non-pregnant women (1). As such, severe iodine deficiency in pregnancy can lead to maternal and fetal hypothyroidism. As adequate thyroid hormone is required for normal fetal development, iodine deficiency in pregnancy is associated with congenital anomalies, decreased intelligence, and cretinism as well as maternal and fetal goitre. Salt iodization is a simple, cheap, and effective means to ensure iodine intake, however large-scale iodization programmes have yet to be implemented in many settings, and despite major progress over the last four decades, it has been estimated that nearly 2 billion individuals worldwide remain at risk for iodine deficiency disorders. In many countries, pregnant women in particular are not receiving adequate iodine [23]. In settings where iodized salt is not readily available, supplementation may provide needed iodine during pregnancy and lactation.

In early childhood, breast milk is the only food. In most lactating women who did not receive iodine prophylaxis during pregnancy, the iodine content in colostrum decreases sharply by the third day after childbirth. Therefore, it is advisable to continue iodine prophylaxis throughout the entire period of pregnancy and breastfeeding [12].

The aim of the study was to assess the significance of iodine prophylaxis in pregnant and lactating women.

Materials and methods

We studied 200 women, including 100 pregnant women and 100 postpartum patients living in an endemic area. 50 children born in conditions of iodine deficiency without prenatal iodine prophylaxis and whose mothers received iodine preparations from the early stages and throughout the entire period of pregnancy and breastfeeding. The research methods were: general clinical, biochemical questionnaires, determination of daily iodine excretion in urine and milk, statistical, questionnaires.

Result and discussion

Iodine deficiency leads to impaired reproductive function in women: the number of miscarriages, stillbirth's increases, perinatal and infant mortality increases. The course of pregnancy and childbirth in women with endemic goiter is accompanied by an increased frequency of complications such as spontaneous miscarriage (4%), preeclampsia (7.2%), chronic intrauterine fetal hypoxia (34%), discoordination of labor (31%), placental insufficiency (18%), the threat of termination of pregnancy (24%).

Fetal prematurity in this contingent of patients is noted in 25% of cases, intrauterine growth retardation - 23.5%, purulent-septic complications in newborns - 40%.

Thus, the widespread introduction of the program of antenatal and postnatal iodine prophylaxis, which implies the intake of iodine by pregnant and lactating women, will significantly reduce the pathology of pregnancy and improve the mental and physical health of the younger generation. Prevention of iodine deficiency during pregnancy is an effective measure to protect the body of the mother and child.

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INDICATORS OF PHYSICAL DEVELOPMENT OF CHILDREN DEPENDING ON
APPLIED CARE METHODOLOGY

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✓ *Resume*

Infants in arms and children in early childhood are subjected to growth stopping and development mainly as a result of nourishment and care disturbances. The aim of our research was to investigate the dynamics of physical development of children depending on the kind of rearing and the applied modes of care. The indices connected with the mass, height and mass-height index were investigated in 445 children from their birth and up to the age of 5. We have been studying the dynamics of body mass increase differentially with respect to every kind of rearing according to the given care in order to investigate the direct influence of care principles on the physical development of children. The results of the investigation showed that MHI figures in children, received EN and the corresponding care were in correlation with the average MHI figures typical for the given age in the population even exceeding them during some periods.

Key words: infants, care, physical development, mass-growth index.

ПОКАЗАТЕЛИ ФИЗИЧЕСКОГО РАЗВИТИЯ ДЕТЕЙ В ЗАВИСИМОСТИ ОТ
ПРИМЕНЯЕМЫХ ТЕХНОЛОГИЙ УХОДА

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✓ *Резюме*

Грудные дети и дети раннего возраста наиболее подвержены задержкам роста и развития в основном вследствие нарушений питания и ухода. Целью нашего исследования явилось изучение динамики физического развития детей в зависимости от вида вскармливания и применяемых способов ухода.

Показатели массы, роста и массо - ростового индекса были изучены у 445 детей с рождения до 5 летнего возраста. Динамику прироста массы тела мы изучали дифференцировано при каждом виде вскармливания в зависимости от применяемого ухода с целью изучения непосредственного влияния принципов ухода на физическое развитие детей. Результаты проведенного исследования показали, что показатели массо-ростового индекса у детей, получивших исключительно грудное вскармливание и внедряемый уход, были сопоставимы со средними показателями массо-ростового индекса, характерными для данного возраста в популяции, даже в некоторые периоды их превышая.

Ключевые слова: младенцы, уход, физическое развитие, индекс массы тела.

QO'LLANILADIGAN PARVARISH USULLARIGA BOGLIQ XOLDA BOLALARNING
JISMONIY RIVOJLANISH KO'RSATKICHLARI

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✓ *Rezume*

Chaqaloqlar va yosh bolalar asosan noto'g'ri ovqatlanish va parvarish tufayli o'sish va rivojlanishdan orqada qolishga moyidirar. Tadqiqotimizning maqsadi oziqlantirish turiga va parvarish qilish usullariga bogliq xolda bolalarning jismoniy rivojlanish dinamikasini o'rganishdir. Vazn, bo'y va vazn - bo'y indeksi ko'rsatkichlari 5 yoshgacha bo'lgan 445 nafar bolalarda o'rganildi. Biz bolalarning jismoniy rivojlanishiga bevosita parvarish tamoyillari va oziqlantirish turlari ta'sirini

o'rganish maqsadida, taqqoslash yo'li orqali tana vazni dinamikasini o'rganildi. Tadqiqot natijalari shuni ko'rsatdiki, faqat ona suti bilan emizish va tavsiya etilgan parvarish tamoyillariga amal qilnqdm bolalarda vazn – bo'y indeksi ko'rsatkichlari normal vazn – bo'y indeksining o'rtacha standart ogishlariga mos kelishi, hatto ba'zi davrlarda ulardan yuqori ko'rsatkishlarga ega ekanligini ko'rsatdi. Kalit so'zlar: chaqaloqlar, parvarish, jismoniy rivojlanish, vazn - bo'y indeksi.

Relevance

Infants in arms and children in early childhood are subjected to growth stopping and development mainly as a result of nourishment and care disturbances [2].

Physical, functional, nervous and psychical development of a child is an integral process, which formed out of the whole complex of a great number of morphological and functional indications in their dynamics and intercommunication. The aggregate of factors: biological, genetic, social-economic, daily round and alimentary influence the rate of growth and development of children.

Investigations conducted by Elliot K.G. et al., (2017) revealed the existence of correlation between the size of psychological assistance received by the child, child's growth and nutritious status. Besides, there are a lot of published works demonstrating direct connection between the educational level of people taking care of the child, their children's health and nutritious status [9].

The results of numerous investigations carried out in different countries of the world show with validity that a lot of technologies applied in medicine were found to be ineffective, nevertheless they have been still applied [1,10]. One of the most important reasons of children's morbidity and death is the ancient stereotype concerning the necessity of fixing the child's upper and lower extremities, in such a way promoting the limitation of diaphragm excursion, blood circulation reduction, and, in this connection the tendency to frequent respiratory diseases [4,8]. The fixing of extremities is closely connected with a high risk of development of sudden infantile mortality syndrome [7].

The other weighty reason of the growth of children's morbidity is the stereotype of frequent bathing rejection stipulated by the fear of catching supercooling, umbilical cord infection and the other disturbances [3,6]. According to investigation data, frequent bathing of children with medicinal herbs promotes relaxation of the nervous system, that is very important when it is out of order, and also reducing of susceptibility towards infection and decreasing of intoxication during respiratory diseases development [5].

While using of soap the disturbance of normal biocenosis of skin and its dryness began developing [11]. Careless marketing without any observance of international codes enlarges the

application of different kind of adsorbents of physiological excrements, especially in medical institutions. In the first place they present the baby to feel the process of urination and defecation and also can lead to the disturbance of urination rhythms and urine-genital system development.

The aim of our research was to investigate the dynamics of physical development of children depending on the kind of rearing and the applied modes of care.

Material and methods

From the total number of 445 examined children 335 children (79,7%) were on exclusively nursing (EN) up to three moths, towards the sixth month their number reduced to 351 children (78,9%). 4 groups for observation were formed depending on the kind of rearing: the first group consisted of 351 children (78,9%) who were on EN up to six months, the second group consisted of 27 children (6,1%), who were on mainly nursing (MN) – that is, parallel with mother's milk the children were given baby's dummy, water from small bottles. The third group consisted of 44 children (9,9%) who were on mixed nursing (MxN), that is, in addition to mother's milk the children were given some artificial mixture. The fourth group consisted of 23 children (5,2%) who were on artificial feeding. On the whole, in the groups with children up to 2 years old 346 children (77,8%) were on mother's milk rearing, while in groups where the children were more than 2 years old 14 children (9,3%) were given mother's milk.

The indices connected with the mass, height and mass-height index were investigated in 445 children from their birth and up to the age of 5. The following principles of care, recommended by WHO, such as: inapplicability of baby's dummies, free position of a child, frequent daily bathing of children with medical herbs (chamomile, marigold, motherwort, St.-John's – wort) were put into practice in 363 children (the main sub-group), subjected to different kinds of rearing. 82 children (comparison sub-group) were subjected to the previously used care – fixing of extremities, rare bathing with soap (control group). We have been studying the dynamics of body mass increase differentially with respect to every kind of rearing according to the given care in order to investigate the direct influence of care principles on the physical development of children.

Children's anthropometric data have been estimated: measuring of body mass in grams on the scales «Zalimp (Warszawa) Nr 2372» and measuring of height in centimeters with the help of height-indicator. The measurement of physical development parameters was carried out just after the birth, then on the 15-th and the 30-th days once a month till one year, then every three months till three years and every six months every five years. Mass-height index of children was estimated according to the formula: the ratio of body mass in kg to the square of body length (height) in m².

The data obtained during investigation were subjected to statistical analysis on the personal computer Pentium – IV with the help of program of Microsoft Office Excel – 2003, including application of fixed functions of statistical analysis. The methods of variation statistics of parametric and non-parametric character were used, with calculation of arithmetical mean of the index under investigation (M), standard error of the mean index (m), relative quantities (frequency,

%). The statistical meaning of the obtained measurements while comparing of the mean quantities was determined according to Student criterion (t) with estimation of error probability (P) during control on normal distribution (according to excess criterion) and equality of general dispersions (F-Fisher criterion). Authenticity level of $P < 0,5$ was assumed to be statistically significant measures.

Results and discussion

The analysis of the results of the investigation showed that after birth the mass of the examined children was on the average $3395,4 \pm 450,9$ g, the height – $52,3 \pm 3,1$ cm. The dynamics of mass-height index of children from their birth and till 5 years old, received different kinds of rearing is represented in Table 1.

Table 1. Dynamics of MHI (mass-height index) of children received exclusively nursing from 0 till 60 months depending on the applied care principles.

Sub-groups	6 months	12 months	36 months	60 months
Main	$17,2 \pm 0,05^{***}$	$17,0 \pm 0,05^{***}$	$15,4 \pm 0,04^{**}$	$15,5 \pm 0,04$
Comparison	$16,8 \pm 0,16$	$16,2 \pm 0,15$	$14,8 \pm 0,17$	$15,3 \pm 0,18$

Notes: the differences on the data of control group are significant (**- $P < 0,01$; ***- $P < 0,001$).

The results of the investigation showed that MHI figures in children, received EN and the corresponding care were in correlation with the average MHI figures typical for the given age in the population even exceeding them during some periods. The children in comparison group had MHI of lower than mean figures, typical for the given population, however MHI figures didn't exceed two standard deviations.

MHI figures in children received MN with the corresponding care were lower than mean

statistical value, however they didn't exceed two standard deviations. Nevertheless MHI figures in children with MN in control group were lower than two standard deviations, from mean statistical value, in such a way indicating the moderate degree of emaciation of the children of this category.

Table 2. Dynamics of MHI of children received mainly nursing from 0 till 60 months depending on the applied care principles.

Sub-groups	6 months	12 months	36 months	60 months
Main	$16,4 \pm 0,27$	$16,3 \pm 0,21$	$15,0 \pm 0,20^*$	$14,8 \pm 0,23$
Comparison	$16,0 \pm 0,20$	$15,9 \pm 0,18$	$14,4 \pm 0,21$	$14,2 \pm 0,19$

Notes: *- the differences on the data of the control group are significant (*- $P < 0,05$).

During investigation of height-mass index in children received MxN (mixed nursing), (Table 3) it was found that its figures were the lowest among all children, besides with the corresponding care MHI figures were at the lower limit of two standard deviations from the mean statistical value,

and in the case of traditional care during some age periods the figures were lower.

Table 3. Dynamics body mass index of children received mixed nursing from 0 till 60 months depending on the applied care principles.

Sub-groups	6 months	12 months	36 months	60 months
Main	$16,0 \pm 0,24^{**}$	$15,6 \pm 0,17^*$	$14,7 \pm 0,20$	$13,8 \pm 0,17$
Comparison	$15,1 \pm 0,14$	$15,0 \pm 0,15$	$14,1 \pm 0,16$	$13,1 \pm 0,12$

Note: the differences on the data of the control group are significant (**- $P < 0,01$; *- $P < 0,05$).

The low value of MHI can express the after-effects of prolonged influence of nutrition

disturbances and indicate its chronic insufficiency in children who don't have enough indispensable

food substances. It can be also connected with the absence of the corresponding care and repeated infections.

In the children with artificial feeding the dynamics of MHI was the most variable, with the sharp fluctuations (Table 4). During some age

periods it increased, sometimes reaching the lowest limit of two standard deviations from the mean statistical values.

Table 4. Dynamics of MHI on children's body, who received artificial feeding from 0 till 60 months depending on the applied principles.

Sub-groups	6 months	12 months	36 months	60 months
Main	17,7±0,27**	17,6±0,35***	16,6±0,23	16,6±0,22
Comparison	18,8±0,30	17,8±0,23	16,9±0,26	17,1±0,26

Notes: the differences on data of the control group are significant (**-P<0,01; ***-P<0,001).

During investigation of MHI in dynamics in children with the given kind of nursing without any differentiation concerning the care mode the children revealed general inclination to redundant body mass (MHI figures were at the highest limit of two standard deviations from the mean statistical value). However, during differentiation it was found, that children had higher MHI with the previously applied care than with the modern applied care. Sharp fluctuations of MHI in the given group, perhaps, are stipulated by frequent morbidity of children in the given group as well. Thus, the results of the given investigation show in what extent the mode of children's care is considerable for the physical development of children.

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CHARACTERISTICS OF THE FUNCTIONAL STATE OF THE PSYCHOEMOTIONAL STATE IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AFTER CORONAVIRUS INFECTION AND THE EFFECTS OF COMPLEX THERAPY

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✓ **Resume**

To study the quality of life, the psychoemotional state and the effect of complex therapy on the parameters of the ventilation-perfusion function of the lung and the parameters of the diastolic function of the right ventricle of the heart in patients with chronic obstructive pulmonary disease after coronavirus infection.

Key words: *chronic obstructive pulmonary disease, coronavirus infection, right ventricular hypertrophy, vascular endothelial function, diastolic dysfunction of the right ventricle*

**ХАРАКТЕРИСТИКА ФУНКЦИОНАЛЬНОГО СОСТОЯНИЯ
ПСИХОЭМОЦИОНАЛЬНОГО СОСТОЯНИЯ У БОЛЬНЫХ ХРОНИЧЕСКОЙ
ОБСТРУКТИВНОЙ БОЛЕЗНИ ЛЕГКИХ
ПОСЛЕ КОРОНАВИРУСНОЙ ИНФЕКЦИИ И ЭФФЕКТЫ КОМПЛЕКСНОЙ
ТЕРАПИИ**

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✓ **Резюме**

Изучить качество жизни, психоэмоциональное состояние и влияние комплексной терапии на показатели вентиляционно-перфузионной функции легких и параметры диастолической функции правого желудочка сердца у пациентов с хронической обструктивной болезнью легких после коронавирусной инфекции.

Ключевые слова: *хронической обструктивной болезнью легких, коронавирусная инфекция, гипертрофия правого желудочка, эндотелиальной функции сосудов, диастолической дисфункция правого желудочка (ПЖ), амлодипин.*

**КОРОНАВИРУС ИНФЕКЦИЯСИДАН СЎНГ СУРУНКАЛИ ОБСТРУКТИВ ЎПКА
КАСАЛЛИГИ БИЛАН ОҒРИГАН БЕМОРЛАРДА ПСИХОЭМОЦИОНАЛ ҲОЛАТНИНГ
ФУНКЦИОНАЛ ҲОЛАТИ ХУСУСИЯТЛАРИ ВА КОМПЛЕКС ДАВОНИНГ
ХУСУСИЯТЛАРИ**

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институт

✓ **Резюме**

Таdqiqot maqsadi ўпканинг сурункали обструктив касаллиги бўлган беморларда коронавирус инфекциясидан кейин ўпка гемодинамикаси, юрак ўнг бўлмача диастолик функцияси кўрсаткичларини комплекс терапия муолажалари таъсирида ижобий силжишини ўрганиш. Natijalarga кўра, ўпканинг сурункали обструктив касаллиги оғриган беморларда базисли даво билан биргаликда кальций канали блокаторлари билан биргаликда қўллаш ўпка гемодинамикасининг яхшиланишига олиб келади.

Калит сўзлар: ўпканинг сурункали обструктив касаллиги, коронавирус инфекцияси ўнг қоринча гипертрофияси, томирларнинг эндотелиал функцияси, ўнг қоринча диастолик дисфункцияси, амлодипин.

Relevance

Chronic obstructive pulmonary disease (COPD), as a cause of death, ranks 4th in the world in the age group over 45 years old and is the only disease in which mortality continues to increase. Due to the widespread prevalence of COPD, direct medical and indirect costs associated with morbidity and premature mortality pose a serious economic and social problem for society in general and health authorities in particular [1,2].

Obviously, only in-depth studying all aspects of this disease will help find a way out of the current impasse. Chronic obstructive pulmonary disease is one of the leading diseases leading to disability, and tends to a steady increase in primary cases in both industrialized and developing countries [3,8]. The risk of COPD varies from 1.85 to 2.88 per 1,000 population. According to the conclusion of the World Health Organization, in the last 10 years, COPD among the causes of death is in 4th place, being the cause of 4.9% of deaths of all diseases. According to experts' forecasts, by 2020, COPD will take 3rd place in the structure of total mortality [7,8,26]. The acute hypoxemic patients may experience dyspnoea that may persist despite the administration of oxygen flows >10-15 L/min with a reservoir mask [3,15]. In these cases, other devices, such as High-Flow Nasal Oxygen (HFNO) or the application of Continuous Positive Airways Pressure (CPAP) or Non-Invasive Ventilation (NIV) may be useful. However, it is important to point out that these interventions have to be used only in appropriate hospital settings in order to be prepared for a more aggressive treatment. When indicated, the administration of CPAP/NIV can be carried out with various interfaces, depending on the availability and indications (oro-nasal mask, total face or helmet). When using CPAP/NIV, it is important to consider the potential environmental diffusion of aerosol particles of the virus [12,25]. In particular, one of the critical issues of the SARS-Cov-2 in the intermediate phase (between the onset of disease and potential critical evolution, also in relation to comorbidity) is represented by the selection of oxygen therapy and the level of care. Non-invasive supports (CPAP, NIV and HFNO) can correct hypoxemia and respiratory failure (even in the absence of clear evidence from proper randomized controlled studies), delaying or avoiding endotracheal intubation (and its potential complications and effects on the outcome) [14,26].

However, looking at SARS epidemic data, physiotherapists have to be careful when treating these patients because there is evidence that NIV may increase the risk of aerial spreading of the virus [11,16]. Thus, if a patient shows prognostic factors suggesting the need of invasive ventilation [17,27,16], it is preferable to carry out elective intubation, rather than emergency intubation in critical conditions.

Along with smoking, industrial pollutants, such as dust, gases, smoke, toxic aerosols, are becoming an important risk factor for the development of COPD, which significantly increase the frequency and severity of the disease [9]. The data given in the literature by domestic and foreign authors indicate that about 15–20% of all cases of COPD are associated with professional activity [5, 4,9].

Chronic obstructive pulmonary disease is essentially a disease with features of a destructive process, as a result of which damage to the entire respiratory system develops, including the bronchi up to the terminal bronchioles, parenchyma and interstitium [1,10]. An important feature of the pathological process in COPD is its low reversibility [2]. The main method of treatment for such patients has long been the use of bronchodilators, starting with belladonna. However, as new knowledge about the essence of pathology was gained, new approaches to therapy were developed [8]. First of all, it became clear that COPD patients are not the same. They differ in the course of the disease, in symptomatology, in prognosis, in response to one or another therapy, which is defined as phenotypes [4,7,8].

The aim of the study was to study pulmonary hemodynamics and diastolic dysfunction of the right ventricle (RV) in patients with chronic obstructive pulmonary disease COPD in dynamics, combination therapy with calcium channel antagonists is recommended to improve pulmonary hemodynamics and bronchial patency [14,7,18].

Materials and methods

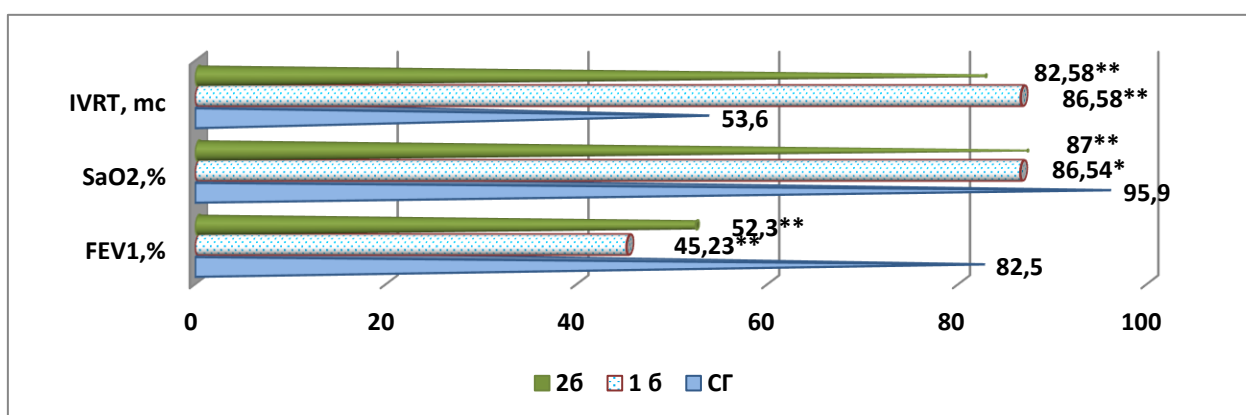
Thirty-five patients with COPD and 20 healthy individuals (AP) were examined. In patients, according to Doppler echocardiography parameters, PH (the level of mean pulmonary arterial pressure LAPav > 25 mm Hg) and the presence of RV without PH (thickness of the anterior wall of the RV according to EchoCG <5

mm, with anteroposterior size of the RV > 2.5 cm). Patients were divided into 2 groups and a, b subgroups: 1a - gr. control group (CG) 8 patients with COPD with PH; 1b - column 7 patients with COPD with PDG received basic therapy (BT, GINA 2006), 2a - gr. 10 patients with COPD with PH; 2b - column 8 patients with COPD with PDG received BT and a combination of calcium antagonist dihydropyridine series amlodipine (A). For 10 days, patients received against the background of BT received a combination of a calcium antagonist of the dihydropyridine series amlodipine (An) 2.5-5 mg / day. FVC), forced expiratory volume in 1 sec (FEV1) and Tiffeneau's index (FEV1 / FVC); the study of peripheral blood flow-endothelium-dependent vasodilation (EDVD) was carried out with an ultrasound device SonoScape SSI-8000 (China); blood oxygen saturation (SaO2) was assessed using the pulse oximetric method "OXY" (Germany); Doppler echocardiography was evaluated using a Vivid S60 ultrasound machine (Sweden) and SonoScape SSI-8000 (China) in accordance with the recommendations of the American Society. The

results were processed using the Excel software package using the Student's t-test. Differences between the studied parameters were considered significant at $p < 0.05$.

Results and discussion

Before treatment in conditions of increased myocardial oxygen demand in patients, there was a violation of the parameters of endothelium-dependent vasodilation: a decrease in the maximum blood flow velocity in the brachial artery after a reactive test (V_{max}) - by 18, 9 (1st group) versus 28.4% (2nd); an increase in the index of circulatory resistance (ICR) - by 18.2 and 29.1% ($p < 0.001$ in relation to the control group). The data obtained correspond to the opinion of A.G. Chuchalin. [7] that the intensification of inflammatory phenomena leads not only to local changes, but also to significant systemic changes. Thus, disturbances in the peripheral mechanisms of regulation of vascular tone develop earlier and more significantly in patients with PH and COPD compared to COPD with PDG ($p < 0.05$, in relation to indicators of PL) (figure).



Picture. Parameters of EDVP and FVD in patients with COPD in the dynamics of complex treatment.

According to FVD, there was a decrease in the ventilation state of the bronchopulmonary system in all patients with PH and PDG. Thus, the FEV1 index in all patients was $-46.1 \pm 1.6\%$, ($p < 0.005$), SaO2, respectively, $89.6 \pm 1.4\%$ ($p < 0.05$), which is typical for an increase in bronchial obstruction. The results obtained revealed the relationship between the clinical course, an increase in LAP avg. and ventilation and perfusion disorders in patients with COPD.

There was a tendency towards a more pronounced decrease in the atrial filling fraction (FPF, %) of the pancreas in patients with COPD 2 - gr. LH and RV of subgroups, respectively, by 1.05 and 1.08 times; and an increase in the time of deceleration of the maximum speed of early diastolic filling (VZ, m / s) by 1.07 and 1.15 times;

a decrease in the ratio of early and late diastolic filling ($E \setminus A$) by 1.17 and 1.45 times, respectively ($p < 0.05$), which indicates an increase in myocardial stiffness and impaired passive relaxation.

After the therapy, there is an improvement in the studied parameters. Positive correlations were revealed between SaO2: isovolumic relaxation time (VIR, m / s) and VZ, respectively, 0.40 and 0.35 ($p < 0.05$). After treatment in 2-gr. LH and RVD subgroups, in patients, the blood SaO2 values increased to 89.8 ± 0.7 and $92.3 \pm 0.6\%$, respectively, by 1.10 and 1.16 times lower than the LP indicators ($p < 0.05$). In the dynamics of the complex treatment with Am $E \setminus A$, the indicators increased by 7.9 and 4.0%, respectively, and the mean pulmonary artery pressure (LAPav) by 1.20

and 1.16 times ($p < 0.01$). The use of BT alone does not have a significant effect on the parameters of pulmonary hemodynamics, providing only a decrease in LADav.

Correlation analysis showed that the increase in obstruction and hypoxemia are closely associated with the development of diastolic dysfunction of the pancreas. At the same time, the severity of the increase in LADav. has a significant dependence on the severity of COPD.

In our study, the use of amlodipine 2.5-5 mg / day against the background of BT in patients with COPD with PH led not only to a decrease in PAP avg., but was also accompanied by a positive shift in ventilation-perfusion lung capacity in group 2 of patients by 10.5% ($p < 0.01$). LAD Wed after treatment in group 2 decreased by 15.7% (significance of the difference with the indicators before treatment $p < 0.05$). It should be noted that in patients with COPD and PH with an increase in PAP avg. changes in the structure of filling the pancreas in diastole. The mutual aggravation of disorders in the combination of cardiorespiratory pathology is based on the commonality of some links of pathogenesis - disorders of pulmonary and cardiac microcirculation, the development of hypoxemia and pulmonary hypertension. It was found that in patients with COPD with PH receiving amlodipine against the background of BT, there is an improvement in the parameters of pulmonary hemodynamics and ventilation capacity and bronchial patency of the lungs.

Conclusions

1. Violations of the peripheral mechanisms of regulation of vascular tone develop earlier and more significantly in severe clinical course of COPD with an increase in PAP cf. ($p < 0.05$).

2. Complex treatment of patients with COPD with pulmonary hypertension, including amlodipine, reduces the tone of pulmonary vessels and simultaneously improves endothelium-dependent vasodilation of peripheral vessels.

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**FEATURES OF THE MORPHOPHENOTYPE AND CHARACTERISTICS OF THE
PHYSICAL PERFORMANCE OF YOUNG FOOTBALL PLAYERS AND THEIR
RELATIONSHIP WITH THE PLAYING ROLE**
(Review article)

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✓ **Resume**

In football players, sportsmanship largely depends on factors such as weight, body length, physical performance, speed-strength qualities and speed. Physical performance is an expression of human activity, which is based on movement. This manifests itself in various forms of muscle activity, and this, in turn, depends on the weakness and motivation of a person for professional activity. Anthropometric indicators of weight, height, total body size and proportions, somatotype, significantly affect physical performance, sports activity and the choice of sports specialization.

Key words: physical performance, peculiarities of morphophenotype, young football players, playing role, sports success.

**YOSH FUTBOLISTLARDA MORFOFENOTIPIK XUSUSIYATLAR VA JISMONIY
FAOLIYAT KO'RSATKICH XARAKTERISTIKASI, HAMDA ULARNING O'YIN AMPLUASI
BILAN ALOQADORLIGI**
(sharhlovchi maqola)

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Buxoro davlat tibbiyot instituti

✓ **Rezyme**

Futbolchilar uchun sport mahorati asosan vazn, tana uzunligi, jismoniy ishlash, tezlik-quvvat fazilatlar va tezlik kabi omillarga bog'liq. Jismoniy ishlash - bu harakatga asoslangan inson faoliyatining ifodasidir. Bu o'zini mushak faoliyatining turli ko'rinishlarida namoyon qiladi va bu, o'z navbatida, odamning kasbiy faoliyatga bo'lgan zaifligi yoki motivatsiyasiga bog'liq. Og'irligi, bo'yi, tana umumiy hajmi va nisbati, somatotipning antropometrik ko'rsatkichlari jismoniy ko'rsatkichlarga, sport faoliyatiga va sport ixtisosligini tanlashga sezilarli ta'sir qiladi.

Kalit so'zlar: jismoniy ishlash, somatizm turi, yosh futbolchilar, morfofenotip

**ОСОБЕННОСТИ МОРФОФЕНОТИПА И ХАРАКТЕРИСТИКА ФИЗИЧЕСКОЙ
РАБОТОСПОСОБНОСТИ ЮНЫХ ФУТБОЛИСТОВ И ИХ ВЗАИМОСВЯЗЬ С ИГРОВОЙ
АМПУА**
(обзорная статья)

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✓ **Резюме**

У футболистов спортивное мастерство в большой мере зависит от таких факторов, как масса, длина тела, физическая работоспособность, скоростно-силовые качества и быстрота. Физическая работоспособность является выражением жизнедеятельности человека, имеющим в своей основе движение. Это проявляется в различных формах мышечной активности, а это в свою очередь зависит от слабости и мотивации человека к профессиональной деятельности. Антропометрические показатели вес, рост, тотальные

размеры и пропорции тела, соматотип, существенно влияет на физическую работоспособность, спортивную деятельность и выбор спортивной специализации.

Ключевые слова: физическая работоспособность, соматотип, юные футболисты, морфофенотип

Relevance

At the present stage of the development of the training process in youth football, it is very important to have information about the structure and the totality of essential connections between the components, types and forms of the internal organization of the physical fitness of football players. The sportsmanship of football players largely depends on the weight and length of the body, physical performance, speed-strength qualities and speed. Sports genetics is still at the beginning of the journey, but at the same time it is opening. Physical performance is the most important component of an athlete's readiness for competitions and is largely determined by the level of the athletes' functional state [33]. The physical development of a person is influenced by heredity, the environment, socio-economic factors, working and living conditions, nutrition, physical activity, and sports [19]. Each game sport requires high basic indicators: the level of endurance, speed-power qualities, technical and tactical skill, stable psyche, team communication and the level of interaction [20].

Physical development is a set of morphological and functional signs that allow to determine the reserve of physical strength, endurance and working capacity of the body. Physical development is largely due to hereditary factors (genotype), but at the same time, its state after birth (phenotype) to a greater extent depends on living conditions and upbringing. Physical development is one of the indicators of the health status of a football player [12].

Physical fitness is a process during which one or another level of physical fitness is achieved. General physical training is aimed at increasing the level of physical development, broad motor readiness as prerequisites for success in various types of activity.

Special physical training is a specialized process that contributes to success in a specific activity (type of profession, sport, etc.), which makes specialized requirements for a person's motor abilities. The result of physical training is physical fitness, reflecting the achieved performance in the formed motor skills and abilities, contributing to the effectiveness of the target activity (to which the training is oriented).

Physical development is the process of formation, formation and subsequent change during the life of an individual of the

morphological and functional properties of his body and the physical qualities and abilities based on them.

Physical development is characterized by changes in three groups of indicators:

- Indicators of physique (body length, body weight, posture, volume and shape of individual parts of the body, the amount of fat deposition, etc.), which characterize, first of all, biological forms, or morphology of a person.
- Indicators (criteria) of health, reflecting morphological and functional changes in the physiological systems of the human body. The functioning of the cardiovascular, respiratory, autonomic and central nervous systems, digestive and excretory organs, thermoregulation mechanisms, etc. is of decisive importance for human health.
- Indicators of the development of physical qualities (strength, speed abilities, endurance, etc.). The biological law of exercise and the law of the unity of forms and functions of the organism in its activity are of great importance for the management of physical development in the process of physical education. These laws are the starting point for choosing the means and methods of physical education in each specific case [18,24].

Currently, the task of preparing a highly qualified reserve for professional football is being actualized. The most important task of all sports training is the formation of a high level of functional capabilities of those who go in for it, since it serves as the basis for the growth of sportsmanship and special physical working capacity [17].

The selection of gifted and promising athletes is of particular importance for achieving high results in sports. According to R.N. Dorokhova [15,16], sports morphologists and anthropologists are currently facing the task of finding new criteria for selection, orientation and improvement of the training process. Achieving high results in any kind of activity depends on many factors, the main of which is the maximum correspondence of individual characteristics of a person to the requirements of the chosen specialization. In this regard, taking into account the requirements of a particular kind of sport for the human body is the most important condition for the education of highly qualified athletes [1, 3, 4, 32].

It is well known that all physiological and formally physiological characteristics are due to the human constitution, which is a functional unity of all physical and physiological properties of the human individual. When it comes to the constitution, we mean the integrity, unity, stability of the nature of the features under consideration.

The principle of a holistic study of a person does not raise doubts among researchers, however, this approach is either not used in the sports contingent, or is implemented partially in a more methodological way. It is not known to what extent the somatic and physiological characteristics of athletes of different specializations mutually condition each other. Do these indicators combine the same factors in the structure of athletes' physical performance or do they exist relatively independently of each other? There is still no algorithm for the reliable assignment of athletes at the stage of sports improvement, taking into account the informative psychophysiological complex, to the kind of sport, to which they are more consistent [11, 23].

Assessment of physical development (RF) of a person is of great practical importance in improving the system of physical education and sports training [21, 36, 38], and is also one of the informative indicators of the level of health of the population [31]. The morpho-phenotype of the constitution (somatotype, somatic type, body type) is the most accessible to research, relatively stable in ontogenesis and genetically determined characteristic of the integrity of the organism. Recently, in our country, the method for determining the somatotype of R.N. Dorokhova (1985, 1991). In the studies of R.N. Dorokhov's constitutional diagnosis is based on the priority of morphological features, and the constitution itself is considered as a set of general and particular constitutions. Somatotype is understood as the equivalent of the term "constitution" [22, 36].

The morphophenotype of the constitution (somatotype, somatic type, body type) is the most accessible to research, relatively stable in ontogeny and genetically determined characteristic of the integrity of the organism. Recently, in our country, the method for determining the somatotypes of R.N. Dorokhova (1985, 1991).

To assess the constitution of a person, the scheme of Stefko and Ostrovsky (1929) is used [31, 39]. The proposed scheme provides for the allocation of pure (asthenoid, thoracic, muscular, digestive and abdominal), mixed (combination of elements of pure types) and undefined types of constitution. However, this typology is based on somatic characteristics, which makes a significant subjective part in the assessment of indicators. For

decades, scientists have been working on the creation of a fundamentally new system for assessing constitutional types using signs that have a quantitative, metric expression, which makes it possible to predict the duration of individual periods of development, which serves as the basis for predicting the definitive body size, its component composition and motor qualities of an athlete.

The proportions of the physique are determined by the ratio of individual parts of the body and its length, i.e. the indices of the relative length of the lower and upper extremities, the width of the shoulder, pelvis, etc. are calculated. It is customary to distinguish 3 main types of proportions - dolichomorphic, brachymorphic and mesomorphic. In somatotyping, it is proposed by different authors to use the Rohrer, Pirquet, Rhys-Eysenck, Erisman, shoulder-growth indices; available food indices - Quetelet and Quetelet II; the ratio between the upper and lower body segments [34, 37]

The morphological, functional and motor parameters of a person are determined by the type of his constitution, which is the medical and biological basis for a differentiated approach in the system of physical education, which implies the need to develop new pedagogical technologies, taking into account the individual typological characteristics of the human body.

Football as a sport places high demands on various types of training for young football players [14]. One of the most important aspects of training is the special physical training of young football players [25]. It is known that in the process of competitive activity, football players of different roles (goalkeeper, defenders, midfielders, forwards) perform loads of different volume and intensity. The role of a football player also determines the required level of development of physical abilities. In this regard, in our opinion, when developing physical abilities in the process of training activities, it is necessary to take into account the playing role of young football players.

Among the many indicators of the individual characteristics of the body of athletes, anthropomorphological signs are of great interest, since they can determine the manifestation of strength, speed, endurance, etc. [24, 26, 29].

Anthropometric measurements allow obtaining objective data on important morphological parameters of the body - length, mass, chest circumference, etc. They are the basis of somatometric methods for studying the physical development of a person [23, 27, 28, 30]. The data of many studies in various countries of the world show that height, body weight and other morphological indicators play an important role in

human physiology, his health directly depends on these indicators [2, 5, 6, 9,10]. Thus, the low growth of a number of peoples in tropical countries is a consequence of a lack of protein in food. Being overweight significantly reduces life expectancy. In children and adolescents in high mountains, the processes of growth and puberty are greatly slowed down in comparison with residents of lowland and low mountain regions. Geographic conditions of any region leave their mark on the body of athletes [7, 8, 13, 38].

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FEATURES OF THE ANTHROPOMETRIC PHENOTYPE AND PSYCHOPHYSIOLOGICAL CHARACTERISTICS OF JUNIOR AND CADET ATHLETES

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✓ Resume

The success of athletes in high-level sport competitions is an important component of the country's international prestige. In this regard, the situation regarding the importance of the health of athletes for their achievement of high sports results has acquired particular relevance. The results of scientific research have proven that the optimal health indicators of athletes are based on the state of dynamic balance between the functional reserves of the body and the factors affecting it. At the same time, the magnitude of the influence of the factors that are inherent in the modern system of training athletes on the body of those involved increases in proportion to the stages of their professional development, which requires not just optimal health indicators, but the presence of an appropriate level of reserves of functions of its components. The value of the latter is the basis of the athlete's reliability - an indicator that is characterized by high performance of actions and its stability in extreme conditions of activity.

Key words: sport medicine, sports genetics, predicting the capabilities of athletes, selection of athletes.

ОСОБЕННОСТИ АНТРОПОМЕТРИЧЕСКОГО ФЕНОТИПА И ПСИХОФИЗИОЛОГИЧЕСКИЕ ХАРАКТЕРИСТИКИ ЮНОШЕСТВЕННЫХ И КАДЕТСКИХ СПОРТСМЕНОВ

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✓ Резюме

Успех спортсменов на спортивных соревнованиях высокого уровня - важная составляющая международного престижа страны. В связи с этим особую актуальность приобрела ситуация о важности здоровья спортсменов для достижения ими высоких спортивных результатов. Результаты научных исследований доказали, что оптимальные показатели здоровья спортсменов основаны на состоянии динамического баланса между функциональными резервами организма и факторами, влияющими на него. При этом величина влияния факторов, присущих современной системе подготовки спортсменов, на организм занимающихся возрастает пропорционально этапам их профессионального развития, для чего требуются не просто оптимальные показатели здоровья, но и наличие соответствующего уровня резервов функций его компонентов. Величина последней лежит в основе надежности спортсмена - показателя, характеризующегося высокой производительностью действий и ее устойчивостью в экстремальных условиях деятельности.

Ключевые слова: спортивная медицина, спортивная генетика, прогнозирование возможностей спортсменов, отбор спортсменов.

UNIOR VA KADET SPORTCHILARINING ANTROPOPETRIK FENOTIPI VA PSIXOFIZIOLOGIK XUSUSIYATLARI

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Buxoro davlat tibbiyot instituti

✓ Resume

Sportchilarning yuqori darajadagi sport musobaqalarida erishgan yutuqlari mamlakatning xalqaro obro'sining muhim tarkibiy qismidir. Shu nuqtai nazardan, sportchilarning sog'lig'ining yuqori sport natijalariga erishish uchun ahamiyati haqidagi vaziyat alohida dolzarblikka ega bo'ldi [4; 17; o'n

to'qqiz]. Ilmiy tadqiqotlar natijalari sportchilarning optimal salomatlik ko'rsatkichlari organizmning funksional zaxiralari va unga ta'sir etuvchi omillar o'rtasidagi dinamik muvozanat holatiga asoslanganligini isbotladi [1; to'qqiz; 22; 23]. Shu bilan birga, zamonaviy sportchilarni tayyorlash tizimiga xos bo'lgan omillarning ishtirok etganlar tanasiga ta'siri kattaligi ularning kasbiy rivojlanish bosqichlariga mutanosib ravishda oshib boradi, bu nafaqat sog'liqni saqlashning optimal ko'rsatkichlarini, balki mavjudligini ham talab qiladi uning tarkibiy qismlari funktsiyalarining tegishli darajadagi zaxiralari [7; 12; 26]. Ikkinchisining qiymati sportchining ishonchliligida yotadi - bu harakatlarning yuqori ko'rsatkichlari va ekstremal faoliyat sharoitida barqarorligi bilan tavsiflanadigan ko'rsatkich [5].

Kalit so'zlar: sport tibbiyoti, sport genetikasi, sportchilarning imkoniyatlarini bashorat qilish, sportchilarni tanlash.

Relevance

In the classical practice of sports medicine, it is generally accepted that all preventive, therapeutic and rehabilitation measures should be carried out on the basis of data from an in-depth medical examination of athletes, the resulting component of which is a conclusion on the admission of the examined to training activities [5; 15; 24]. The admission is carried out according to the following criteria: "healthy", "practically healthy", "requires a limitation (full or partial) of training activity." But it follows from practical experience that the data obtained are sufficient for carrying out therapeutic and rehabilitation measures for a specific athlete, but not enough to substantiate the organizational and methodological foundations of the system of measures aimed at protecting the health of a vast contingent of athletes, especially during critical periods of ontogenesis. It becomes clear that, from the point of view of health savings, it is of particular interest to study not just the health status of young athletes, but a comprehensive level-by-level screening of the functional state of those involved. This type of layer-by-layer "screening" will allow to determine the corrected risk factors for the development of somatic pathology in athletes within the framework of uncorrected factors (determinants), in this case it is sports specialization and a stage in the process of many years of training.

According to the research by Svetlana Lyugailo (Results of studying the health status of young athletes: the first level of screening studies) _ using classical approaches to assessing the health status of young athletes, on the basis of the existing criteria for their admission to sports, the previously determined trends in the influence of ontogenetic risk factors for the emergence and development of somatic pathology in the age aspect and in the aspect of professional development. At the same time, a number of negative points were established:

- firstly, despite the presence of diseases and dysfunctional disorders in the somatic systems, athletes continue the training process, which

indicates insufficient control over the functional state of the trainers by the coaching staff and medical workers, who provide the process of training young athletes directly at the place of training;

- secondly, despite the comprehensive examination provided for by the algorithm for conducting an in-depth medical examination, the information received regarding the health status of athletes is not sufficient to formulate a rehabilitation diagnosis, since it is impossible to draw a true conclusion about the adaptive capabilities of the body of a young athlete to physical activity from the data obtained, to obtain quantitative characteristics of the parameters that form the adaptation reserve and, moreover, to predict the occurrence of dysfunctional disorders in various systems of the body of athletes.

The above organizational miscalculations in the development of the structural components of the concept of physical rehabilitation for dysfunctional disorders of the somatic systems of the body of young athletes (somatic diseases) will be taken into account in the group of exogenous corrected risk factors for diseases in athletes.

One of the rapidly developing areas of modern genetics is the development of molecular genetic approaches to determine a person's predisposition to various types of activity. So, in particular, in recent years, a search has been carried out for molecular genetic markers that determine a person's ability to perform high sports loads (Montgomery, 2000; Rogozkin, 2004), which is determined by the need to substantiate a system for selecting people for sports and correcting the training process. This approach is the most promising, since it allows you to determine the genetic predisposition to high physical activity and to carry out a targeted differentiated selection of children for sports at the earliest stages of their sports activity. It should be noted that in 2000 a human genetic map was created, in which genes were introduced, which in at least one study

revealed associations with physical indicators and / or influenced human health (Rankinen, Bray et al, 2006). In the early 2000 version, the map included 29 genes. The 2005 version, 6th - amended, includes 165 autosomal genes, 5 - located on the X chromosome, as well as 17 mitochondrial genes. To date, work of this kind is carried out only in five countries: the USA, Great Britain, Australia, Russia (Scientific Research Institute of Physical Culture - under the leadership of Doctor of Biological Sciences, Professor Rogozkin V.A.; laboratory of molecular genetic research of the Department of Genetics at the Bashkir State Pedagogical University - under the leadership of Doctor of Biological Sciences, Professor Gorbunova V.Yu.) and Kazakhstan. On the site www.genoterra.ru - the register of leading scientific institutions, the laboratory of molecular genetic research of the Department of Genetics of the Belarusian State Pedagogical University is included in the list of groups engaged in the search for genetic markers that determine people's predisposition to sports activities.

Currently, predictive medicine is actively developing, the purpose of which is to identify possible diseases in a particular patient by the DNA structure, as well as to develop a set of preventive or health-improving measures based on these studies. Such preventive measures are also important in sports, which is why sports genetics can achieve high results using scientific methods.

A lot of data, including the results of recent studies, confirm the influence of polymorphism of some genes on the physical characteristics of the athlete and, as a result, on the predisposition of the athlete's body to strength loads or endurance training.

It is necessary to take into account that the development and manifestation of a person's physical qualities depends on both genetic and environmental factors. The more genetic factors influence physical qualities (high degree of heritability), the less successfully these qualities are trained, and vice versa [1].

Sports genetics allows you to calculate the limit for each person to perform any type of exercise, depending not only on the nature of the task, but also on the genetic components. The human genotype largely determines such important characteristics for athletes as strength, endurance, muscle fiber composition and muscle mass, flexibility, neuromuscular coordination, and reaction speed [2, 8].

Over the past few decades, certain hereditary factors have been identified that are responsible for the development of the above qualities in humans. Therefore, sports genetics provides useful

information on how to improve the performance of performances, which athletes to select for competitions and which of them will be able to cope with the task at hand. The selection of young, promising in their hereditary qualities athletes (at the same time the minimum risk of intense physical activity for their health) is an important issue in sports medicine, which can be solved by modern methods of genetics.

The introduction and active use of molecular genetic technologies allows you to create an optimal training program specifically for each athlete, in which the body's energy resources will be used as efficiently as possible, which will allow achieving high sports results.

I would also like to note that in connection with the active development of genetics as a science and methods of its study, genetic research is becoming more and more accessible. At the moment, sports genetics is present not only in elite sports, but also in amateur sports. Fitness is an important part of a healthy lifestyle, and you should approach the issue of its correct organization responsibly. In this case, on the basis of genetic research, a geneticist can recommend a specific diet, diet, exercise regimen, as well as the nature of the exercises, taking into account the individual characteristics of the organism. In addition, sports genetics makes it possible to identify diseases to which a person is genetically predisposed (for example, cardiovascular diseases, bronchial asthma, obesity). Based on the data obtained, it is possible to recommend preventive measures to prevent these diseases for each individual person.

Sports genetics is a young science. Its proclamation as a branch of knowledge took place at the Olympic Scientific Congress "Sport in Modern Society", which was held in Tbilisi in 1980. The International Scientific Society for Sports Genetics and Somatology was also established there.

In 1983, Claude Bouchard first coined the term genetics of fitness and physical performance. Then he published two reviews in one issue of the journal "Exercise and Sport Science Reviews", where he presented generalizing facts, firstly, about individual differences in response to physical activity, and secondly, about the heritability of many qualities involved in the process of physical activity [3, 10].

1995 was marked by the beginning of the international project HERITAGE (HEalth, Risk Factors, Exercise Training And GENetics) led by Claude Bouchard. The project involved several research centers and more than 800 volunteers who were subjected to physical activity for several weeks. K. Bouchard and his colleagues searched

for polymorphic loci associated with physical activity, and published hundreds of works on the topic of heritability of physical factors in humans. The progress in understanding this issue has been significant.

In 1998, the journal "Nature" published a scientific article "Human gene for physical performance" by a young British scientist Hugh Montgomery. He presented the results of his work with a team of authors (19 people) on the study of the role of the ACE gene (angiotensin converting enzyme) in sports activities. H. Montgomery and his colleagues investigated a group of alpine climbers [4, 9, 11.]. The size of the article is only one page, which says that one of the polymorphic alleles of the ACE gene - allele I provides endurance, and allele D - the speed-strength qualities of an athlete. The conclusion was based on the fact that in athletes who are successful in sports requiring endurance, the frequency of allele I is higher than in the control group, and in athletes of high-speed types, allele D predominates [5].

This publication attracted the attention of the entire scientific community and society as a whole. The world media reported on the discovery of the "sport gene" (ACE gene), thanks to which it was now possible to identify a predisposition to a particular sport or physical activity in any person.

Among domestic scientists, it should be noted Eduard Georgievich Martirosov, who created on the basis of Russian Research Institute of Physical Culture and Sports in 1972 the Laboratory of Sports Anthropology (later called the Laboratory of Sports Anthropology, Morphology and Genetics) [6, 29].

Later, research in the field of sports genetics was started in the laboratory of prenatal diagnostics of the Research Institute of Obstetrics and Gynecology. D.O. Otta (St. Petersburg), as well as in the laboratories of the Institute of Biochemistry. A.N. Bach of the Russian Academy of Sciences (Moscow), the All-Russian Scientific Research Institute of Physical Culture (Moscow), the Scientific Research Institute of Transplantology and Artificial Organs (Moscow) and the Russian State University of Physical Culture (Moscow) [7,30]. Now such laboratories are located not only in Moscow and St. Petersburg, but also in other large scientific centers in Russia.

Sports genetics is developing quite rapidly, since the number of new studied genes that characterize the physical qualities of a person is growing exponentially: in 1997 - 5 genes; in 2000 - 24 genes; B 2004 - 101 genes [8, 27]. To date, about 200 genetic markers (DNA polymorphisms) associated with the development and manifestation of physical qualities are known [9 ,21, 25].

In sports, in order to achieve the highest performance, talented athletes must be selected correctly and in a timely manner, and then included in long-term, planned training programs [10, 20, 28].

Today, due to the fact that investments in sports and individual athletes reach significant amounts, the issue of effective selection of athletes is more relevant than ever [10, 14, 16].

Each of us is individual, we carry unique genetic information. And our uniqueness can be studied with the help of DNA diagnostics methods, which shows the characteristics of metabolism, the state of organ systems, the properties of the psyche.

It is impractical and irrational to perform DNA typing for all possible genes responsible for the athletic characteristics of a person. The information obtained must be correctly interpreted and conclusions drawn in relation to each individual case. Moreover, the analysis of one gene is not informative enough.

Genetic analysis provides information about the hereditary predisposition to a particular sport. For example, skeletal muscle is made up of two distinct types of muscle fibers: fast and slow. Slow fibers are characterized by a small force of contraction, but low fatigue, they are involved in the performance of low-intensity strength work for a long time. Fast fibers, on the contrary, are distinguished by a greater force of contraction and high fatigue; they are used when performing short high-intensity strength work [11,13,18,31]. For muscles, which are dominated by slow fibers, aerobic exercise will be the most effective. These sports include swimming, rowing, tennis, long-distance running, cycling, and walking. And for muscles, which are dominated by fast muscle fibers, anaerobic loads (strength training) are most effective. Wrestling, sprint running, powerlifting, arm wrestling, rock climbing are examples of physical activity based on anaerobic muscle metabolism.

The type of muscle fibers prevailing in our body is genetically determined (this is associated with the ACE gene polymorphism). Thus, the results of a distance runner (long-distance runner) in a 2000-meter run negatively correlate with his own results in a 100-meter run.

When the type of physical activity matches the hereditary predisposition, the person can achieve the best results and get the most from the training in the shortest possible time.

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PROSPECTS OF USING THE PROGRAM FOR DETERMINING BODY COMPOSITION AND NEUROPHYSIOLOGICAL CHARACTERISTICS OF JUNIOR AND CADET ATHLETES

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✓ Resume

One of the rapidly developing areas of modern genetics is the development of molecular genetic approaches to determine a person's predisposition to various types of activity. This approach is the most promising, since it allows one to determine the genetic predisposition to the performance of large physical loads and to carry out a targeted differentiated selection of children for sports at the earliest stages of their sports activity. Sports genetics provides useful information on how to improve performance, which athletes to select for competition and which of them will be able to cope with the task at hand. The selection of young, promising in their hereditary qualities athletes (at the same time the minimum risk of intense physical activity for their health) is an important issue in sports medicine, which can be solved by modern methods of genetics. Therefore, sports genetics provides useful information on how to improve the performance of performances, which athletes to select for competitions and which of them will be able to cope with the task. To implement the above tasks, we have developed a program that is designed to study and evaluate indicators of the component composition of the body, types of the nervous system of junior and cadet athletes, as well as the relationship of the component composition of the body. allele-genotypic variants of ADRB2, FABP2 gene in cadets and juniors involved in various sports.

Key words: sports genetics, predicting the capabilities of athletes, selection of young athletes, genetic predisposition, program, assessment of indicators of body composition.

ПЕРСПЕКТИВЫ ИСПОЛЬЗОВАНИЯ ПРОГРАММЫ ДЛЯ ОПРЕДЕЛЕНИЯ СОСТАВА ТЕЛА И НЕЙРОФИЗИОЛОГИЧЕСКИХ ХАРАКТЕРИСТИК СПОРТСМЕНОВ ЮНИРОВ И КАДЕТОВ

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✓ Резюме

Одним из интенсивно развивающихся направлений современной генетики является разработка молекулярно-генетических подходов, позволяющих определить предрасположенность человека к различным видам деятельности. Этот подход является наиболее перспективным, поскольку позволяет определить генетическую предрасположенность к выполнению больших физических нагрузок и осуществить целенаправленный дифференцированный отбор детей для занятия спортом на самых ранних этапах их спортивной деятельности. Спортивная генетика дает полезную информацию о том, как улучшить результативность выступлений, каких спортсменов отобрать на соревнования, и кто из них сможет справиться с поставленной задачей. Отбор молодых, перспективных по своим наследственным качествам спортсменов (при одновременно минимальном риске интенсивных физических нагрузок для их здоровья) является важным вопросом спортивной медицины, который позволяют решить современные методы генетики. Поэтому спортивная генетика дает полезную информацию о том, как улучшить результативность выступлений, каких спортсменов отобрать на соревнования, и кто из них сможет справиться с поставленной задачей. Для реализации вышеперечисленных задач нами разработана программа, которая предназначена для изучения и оценки показателей компонентного состава тела, типов нервной системы спортсменов юниоров и кадетов, а также взаимосвязи компонентного состава тела. аллель-генотипические варианты гена ADRB2, FABP2 у кадетов и юниоров, занимающихся различными видами спорта.

Ключевые слова: спортивная генетика, прогнозирования возможностей

спортсменов, отбор юных спортсменов, генетическую предрасположенность, программа, оценка показателей компонентного состава тела.

ЮНИОР ВА КАДЕТ СПОРТСМЕНЛАРДА ТАНАНИНГ КОМПОЗИЦИОН ТАРКИБИ ВА НЕЙРОФИЗИОЛОГИК ХАРАКТЕРИСТИКАСИНИ АНИҚЛОВЧИ ДАСТУРИНИ ҚЎЛЛАШ ИСТИҚБОЛЛАРИ

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Замонавий генетиканинг тез ривожланаётган йўналишларидан бири бу одамнинг ҳар хил фаолият турларига мойиллигини аниқлаш учун молекуляр генетик ёндашувларни ишлаб чиқишдир. Ушбу ёндашув энг истиқболли ҳисобланади, чунки у катта жисмоний машқлар бажарилишига генетик мойилликни аниқлашга ва уларнинг спорт фаолиятининг дастлабки босқичларида болаларни спортга йўналтирилган табақалаштирилган танловини ўтказишга имкон беради. Спорт генетикаси кўрсаткичларни қандай яхшилаш, қайси спортчиларни мусобақага танлаб олиш ва улардан қайси бири олдига қўйилган вазифани удалай олиши ҳақида фойдали маълумотлар беради. Ўзларининг ирсий тамойиллари бўйича истиқболли ёш спортчиларни танлаш (шу билан бирга уларнинг соғлиги учун интенсив жисмоний фаолликнинг минимал хавфи) замонавий тиббиёт генетика усуллари билан ҳал қилиниши мумкин бўлган спорт тиббиётидаги энг муҳим масаласи ҳисобланади. Шунинг учун спорт генетикаси мусобакаларда кўрсаткичларини қандай яхшилаш, қайси спортчиларни танлаш ва улардан қайси бири бу вазифани удалай олиши ҳақида фойдали маълумотлар беради. Юқоридаги вазифаларни амалга ошириш учун биз организмнинг таркибий кўрсаткичларини, ўспирин ва кадет спортчиларининг асаб тизимининг турларини, шунингдек, тананинг композицион таркибининг ўзаро боғлиқлигини ўрганиш ва баҳолашга мўлжалланган дастур ишлаб чиқдик. Турли спорт турлари билан шугулланадиган кадетларда ва ўсмирларда ADRB2, FABP2 генларининг аллел-генотипик вариантлари.

Калит сўзлар: спорт генетикаси, спортчиларнинг имкониятларини баиорат қилиш, ёш спортчиларни танлаш, генетик мойиллик, дастур, тана композицион таркиби кўрсаткичларини баҳолаш.

Relevance

The victory of athletes at high-level competitions is the most important factor in the country's international status. In this regard, the question of the importance of the health of athletes for achieving high sports results has acquired particular importance [1,17,19,24].

After gaining the sovereignty of our country, the state pays more and more attention to the development of professional sports. One of the main theoretical and applied medical and biological problems of physical culture and sports medicine is the problem of sports selection, the development of the theory of which determines the level of sports achievements and sports science in general. Sports genetics is still at the beginning of the path, but at the same time it opens up many prospects for the development of medical and biological support for sports. The results of scientific research have proven that the optimal health indicators of athletes are based on the state of dynamic balance between the

functional reserves of the body and the factors affecting it [4,5,18,20]. At the same time, the magnitude of the influence of factors that are inherent in the modern system of training athletes on the body of those involved increases in proportion to the stages of their professional development, which requires not just optimal health indicators, but the presence of an appropriate level of reserves of functions of its components [2,10,15,16,23]. The value of the latter is the basis of the athlete's reliability - an indicator that is characterized by high performance of actions and its stability in extreme conditions of activity. The use of the genetic characteristics of the organism will lead humanity to new records, because now not only perseverance, regular training, willpower and motivation of an athlete are important, but also his "Olympic" heredity. The genetic approach to the problem of sports orientation, the selection of athletes will undoubtedly help to avoid

"marriage" in coaching, save from performing ineffective work and ensure high rates of training of athletes [3,6,7,12,21,22]. With the help of genetic analyzes, it is possible to determine not only a predisposition to a particular sport, but also to identify possible health problems that can become a serious obstacle to sports victories. The solution of the above-mentioned problems is an urgent and priority problem of modern sports medicine [8,9,11,13,14].

To implement the above tasks, we have developed a program that is designed to study and assess indicators of the component composition of the body, types of the nervous system of junior and cadet athletes, as well as the relationship between the component composition of the body and allele-genotypic variants of the ADRB2, FABP2 gene in cadets and juniors engaged in various sports.



The purpose of our research was to study the practical significance of the program we created for determining the composition of the body and neurophysiological characteristics of junior and cadet athletes in sports schools in the city of Bukhara.

Materials and methods

To develop practical recommendations and proposals for optimizing the training regime and the selection of promising cadet and junior

athletes, which will allow athletes to achieve high results, on the basis of the data obtained on the point assessment, we analyzed 75 junior and cadet athletes. All these athletes underwent a questionnaire test program to determine body composition and neurophysiological characteristics of junior and cadet athletes.

A program for determining body composition and neurophysiological characteristics of junior and cadet athletes

Программа для определения композиционного состава тела и нейрофизиологической характеристики спортсменов юниоров и кадетов с учетом полиморфизма генов

Фамилия:

Имя:

Отчество:

Дата рождения:

Предмет:

Дата оценки:

Данные для сохранения:

Критерии оценки:

Оценка показателей композиционного состава тела:

☐ Непроводилось
☐ Проводилось частично
☐ Проводилось полностью

Оценка частоты встречаемости аллельно-генотипного варианта гена ADRB2:

☐ Непроводилось
☐ Проводилось частично
☐ Проводилось полностью

Оценка нервной системы спортсменов юниоров и кадетов:

☐ Не оценено
☐ Оценено частично
☐ Оценено полностью

Оценка частоты встречаемости аллельно-генотипного варианта гена FABP2:

☐ Непроводилось
☐ Проводилось частично
☐ Проводилось полностью

Оценка взаимосвязи между показателями композиционного состава тела, типов нервной системы спортсменов юниоров и кадетов:

☐ Непроводилось
☐ Проводилось частично
☐ Проводилось полностью

Оценка взаимосвязи показателей композиционного состава тела, типов нервной системы и аллельно-генотипными вариантами генов ADRB2, FABP2:

☐ Непроводилось
☐ Проводилось частично
☐ Проводилось полностью

Имеет ли спортсмен "олимпийскую" наследственность:

☐ Не имеет
☐ Имеет

Имеет ли спортсмен мотивацию:

☐ Не имеет
☐ Имеет частично
☐ Имеет

Баллы: Вывод:

Программа защищена авторским правом ©

0 - 7 points. The level of expected athletic performance is very low. It requires a full study, assessment and comparison of indicators of the component composition of the body, types of the nervous system and the ADRB2, FABP2 gene in cadets and juniors involved in various sports, to study the relationship between the component composition of the body and allele-genotypic variants of the ADRB2, FABP2 gene in cadets and juniors engaged in various sports.

8 – 14 points. The level of expected sporting achievements is average. It requires the study of the ADRB2, FABP2 gene in cadets and juniors involved in various sports, to study the relationship between the body composition and allele-genotypic variants of the ADRB2, FABP2 gene in cadets and juniors involved in various sports.

15 - 21 points. The level of expected athletic performance is very high, where the development of athletic skills is recommended.

The program can be used in sports schools for sports selection and identification of technical solutions, which in turn will help to improve the level of sports achievements.

Research results

As follows from the data obtained, athletes cadets and juniors who passed the test questionnaire according to the program prepared by us to

determine the composition of the body and neurophysiological characteristics were divided into 3 main groups: 1 group is athletes who received from 0 to 7 points, there were 18, 2 group of athletes which received from 8 to 14 was 47 athletes, the 3rd group of athletes who received from 15 to 21 was 10 athletes juniors and cadets.

Conclusion

The practical significance of the program lies in the fact that the results are fundamental for the development of practical recommendations and proposals for optimizing the training regime and the selection of promising cadet athletes, which will allow athletes to achieve high results. The use of the genetic characteristics of the organism will lead humanity to new records, because now not only perseverance, regular training, willpower and motivation of an athlete are important, but also his "Olympic" heredity. The genetic approach to the problem of sports orientation, selection of athletes will undoubtedly help to avoid "marriage" in coaching, relieve one of ineffective work and ensure high rates of training for athletes. With the help of genetic analyzes, it is possible to determine not only a predisposition to a particular sport, but also to identify possible health problems that can become a serious obstacle to sports victories.

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THE RELEVANCE OF CREATING CIRCLES AT THE UNIVERSITY PROMOTING A HEALTHY LIFESTYLE AMONG STUDENTS

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✓ Resume

This article discusses the organization of classes, circles on a healthy lifestyle in higher educational institutions outside the classroom and, for the high interest of students, ensuring the conduct of these lessons in the form of various interactive methods, as well as the knowledge of students about a healthy lifestyle and the rules for their implementation, disease prevention and practical application of this knowledge in university, district and regional events, at various meetings.

Keywords: health, healthy lifestyle, proper nutrition, clubs that promote a healthy lifestyle.

ОЛИЙ ТАЛИМ МУАССАСАЛАРИ ТАЛАБАЛАРИ УЧУН СОҒЛОМ ТУРМУШ ТАРЗИНИ ТАРҒИБ ЭТУЧИ ТЎГАРАКЛАР ТАШКИЛ ЭТИШНИНГ ДОЛЗАРБЛИГИ

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✓ Резюме

Ушбу мақолада олий талим муассасаларида дарслардан ташқари “соғлом турмуш тарзи” тўғарақларини ташкил қилиш ҳақида, ҳамда бу тўғарақларда талабалар соғлом турмуш тарзи ва унга амал қилиш қонун қоидалари, ҳамда касалланишнинг олдини олиш тўғрисида билимларга эга бўлишлари, шунингдек ушбу билимларини амалий машғулотларда машқ қилиб, олийгоҳ, туман ва вилоят миқёсида ўтказиладиган тадбирларда, турли хил учрашувларда ушбу дарслар ҳамда тўғарақда ўрганган билимлари, эришган натижалари билан қолганлар билан бўлишиб кенг оммага тадбиқ этишлари ҳақида, ҳамда ушбу дарсларни интерактив усулларда олиб боришнинг устувор йўналишлари ҳақида фикр юритилган.

Калит сўзлар: саломатлик, соғлом турмуш тарзи, тўғри овқатланиш, соғлом турмуш тарзини тарғиб этучи тўғарақлар.

АКТУАЛЬНОСТЬ СОЗДАНИЯ КРУЖКОВ ПРИ ВУЗЕ ПРОПАГАНДИРУЮЩИХ ЗДОРОВЫЙ ОБРАЗ ЖИЗНИ СРЕДИ СТУДЕНТОВ

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✓ Резюме

В данной статье рассматриваются вопросы организации занятий , кружков по здоровому образу жизни в высших учебных заведениях вне уроков и для высокого интереса студентов обеспечение проведение этих уроков в виде различных интерактивных методов, а также знания учащихся о здоровом образе жизни и правилах их выполнения, профилактика заболеваний и практическое применение этих знаний в ВУЗовских, районных и региональных мероприятиях, на различных встречах.

Ключевые слова: здоровье, здоровый образ жизни, правильное питание, кружки пропагандирующие здоровый образ жизни.

Relevance

Attitudes toward health have begun to change in modern society, including proper nutrition,

non-smoking, abstinence from alcohol and drugs, and regular exercise. Many understand that the

implementation of health social plans allows you to start a family, give birth to healthy children. Health is important for everyone at any age. To maintain and strengthen health, it is necessary to lead a healthy lifestyle. Health is a normal psychosomatic state that ensures the full performance of labor, social and biological functions, reflecting the normal physical, mental and social well-being of a person.

Human health is, first of all, the development of his mental and physiological qualities, the maintenance of an optimal level of work ability and social activity for the maximum duration of life. According to many scientists, the functional capacity of the human body and its resistance to adverse factors from the external environment change throughout life, because health care is a dynamic process that improves depending on age, gender, occupation, living environment. Human life and health are the greatest social wealth. This raises the issue of forming a healthy lifestyle in front of the family, school and other institutions of human development [1,2,30]. The health of a nation is also naturally addressed through a healthy lifestyle. Health is a balanced unit of biological, mental, physical conditions and labor activity of the human body. Good health is happiness for everyone. Its labor productivity is a necessary condition for the development of the country's economic power, the welfare of the people. A conscious and responsible approach to health should be the norm of life and morality of society and all its members. To maintain and strengthen health, first of all, a person needs to know the laws of normal functioning, growth, development and reproduction of all tissues and organs of the body. It is also necessary to know and create the conditions necessary for the preservation and further improvement of these biological features inherent in man, as in all living things [4,31,33,34,36].

A healthy lifestyle is an individual system of human behavior that provides physical, mental, as well as social well-being in a real environment (natural, man-made, social) and active longevity. A healthy lifestyle creates the best conditions for the normal development of physiological and mental processes, which reduces the likelihood of various diseases, increases life expectancy. A healthy lifestyle helps us achieve our goals and objectives, successfully implement our plans, and cope with challenges. Health, which is maintained and strengthened by a person, allows him to live a long and happy life. Health is an invaluable asset of everyone and society as a whole. [17,23,30].

The formation of a healthy lifestyle should

begin with the birth of a child. A healthy lifestyle is a factor that helps to be healthy, as well as prevent various diseases and accidents, and it is necessary to adhere to it from adolescence. "Save health from youth!" - this proverb has a deep meaning. Factors that have a positive impact on human health are: strict adherence to a routine, proper nutrition, exercise, sports, good relationships with adults, parents and friends. Health risk factors include: inactivity, irregular diet, smoking, alcohol, drug and other toxic intake, emotional and mental stress at home, at school, with friends, as well as environmental risk factors [5,6,7,28,30].

By following simple rules, leading a healthy lifestyle, reading health articles, and following their recommendations, we can avoid a number of serious health problems, even diseases like cancer, as well as simply prolong our lives by several years [3,24,26,27,29].

There is no one who does not want to be healthy. The German philosopher Arthur Schopenhauer said, "Nine-tenths of our happiness is based on this health. With it everything becomes a source of pleasure, but without it absolutely no external benefit brings pleasure, even subjective benefit: the qualities of mind, spirit, temperament are weakened and disappear. It is no coincidence that we first ask each other about health and wish it to each other: this is truly a basic condition of human happiness. What is a healthy and wholesome lifestyle? The Charter of the World Health Organization states that health is "not only the absence of disease and physical defects, but also a state of physical, mental, spiritual and social well-being." Unfortunately, in the rhythm of modern life, people cannot take the time to focus on their health. So we all need to have a good idea of how to live and behave in society [21,22,27]. One of the main factors of health is that it plays an important role in the formation of individual lifestyle and health, in many respects it depends on the person himself and his behavior.

Purpose of work:

In the upbringing of a strong young generation striving for a healthy lifestyle, full adherence to the rules of proper nutrition, avoidance of bad habits, the main components of health: spiritual, physical condition, the dominant factor - knowing and taking into account individual lifestyle, healthy lifestyle, health promotion to carry out propaganda work among teenagers about the need to remember that it is in their own hands, to strive to be physically and spiritually healthy. To form the concept of a

healthy lifestyle in the minds of adolescents, to promote a healthy lifestyle, to explain the rules of a healthy lifestyle in schools, to develop personal qualities necessary for a healthy lifestyle.

Materials and methods

Organization of healthy lifestyle classes and clubs in higher education institutions, as well as during the course students will gain knowledge about healthy lifestyles and rules of conduct, exercise, and disease prevention, and practice this knowledge in practical training at higher education institutions, districts and regions. They learn to apply the knowledge they have learned in these classes and in the circle, to share their findings with the rest of the world, and to encourage them to lead a healthy lifestyle. Students who have seen these results also have a greater desire to lead a healthy lifestyle, and they also have a desire to play sports and lead a healthy lifestyle. Conducting these lessons in a game-based way is another manifestation of the student's interest in such lessons, where students, based on their professional activities, think about various projects, innovations in promoting a healthy lifestyle and come up with ideas that will develop the industry [9,14,19]. This role-playing is one of the typical working games and is an interactive way of self-management. In this case, one of the students is selected as a virtual teacher and the student is notified the day before the practical training. The selected virtual teacher will prepare a variety of interactive games to engage students on the topic [10,15,18,20,21]. Conducting the course in this way leads to the formation of skills and knowledge, especially in the future students, to master the subject, as well as to form a healthy lifestyle [8,17,22,23,25].

Conclusion

Thus, a healthy lifestyle consists not only of harmful habits, labor activity and rest regime, nutrition system, various hardening exercises; rather, it incorporates a system of attitudes toward oneself, another person, life, as well as the meaning of existence, life goals and values, and a number of other concepts. Skillful use of all kinds of factors that affect the various components of health (physical, mental, social, spiritual), healing, recovery, avoidance of harm to nature.

A healthy lifestyle depends in many ways on students' worldviews, social and moral experiences. Social norms, the values of a healthy lifestyle, are perceived by them as important personally, but do not always coincide with the values developed by the public consciousness.

Analyzing the above, in promoting a healthy lifestyle, organizing healthy lifestyle classes and clubs will help students gain a deeper understanding of the importance of a healthy lifestyle for their health and future, as well as promote it.

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DEVELOPMENT OF CONDITIONS FOR TRAMADOL ANALYSIS BY THE METHOD OF THERMODESORPTION SURFACE-IONIZING SPECTROSCOPY

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✓ **Resume**

The procedures for determination and identification of tramadol by the method of thermodesorption surface-ionizing spectroscopy have been developed. It was established that alcoholic solutions of tramadol had maximum absorption at $\sim 88 \pm 15^\circ\text{C}$ and $\sim 205 \pm 15^\circ\text{C}$. The linear-dynamic range is in the interval of 5-50 $\mu\text{g/mL}$ of substance concentration in the sample. Sensitivity of the method is 0,5 $\mu\text{g/mL}$. The developed method is recommended for analysis of tramadol in biological liquids.

Key words: thermodesorption surface-ionization spectroscopy, tramadol, biological fluids.

РАЗРАБОТКА АНАЛИЗА ТРАМАДОЛА МЕТОДОМ ТЕРМОДЕСОРБЦИОННОЙ ПОВЕРХНОСТНОЙ ИОНИЗИРУЮЩЕЙ СПЕКТРОСКОПИИ

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✓ **Резюме**

Разработаны методики определения и идентификации трамадола методом термодесорбционной поверхностно-ионизирующей спектроскопии. Установлено, что спиртовые растворы трамадола имеют максимальную ионизацию при $\sim 88 \pm 15^\circ\text{C}$ и $\sim 205 \pm 15^\circ\text{C}$. Линейно-динамический диапазон находится в интервале 5-50 мкг/мл концентрации вещества в пробе. Чувствительность метода 0,5 мкг/мл. Разработанный метод рекомендован для анализа трамадола в биологических жидкостях.

Ключевые слова: термодесорбционная поверхностно-ионизационная спектроскопия, трамадол, биологические жидкости.

TRADADOLNI THERMODESORPTION SIRT IONLASHUV SPEKTROSKOPIYA TAHLIL USULINI ISHLAB CHIQLASH

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Buxoro davlat tibbiyot instituti
Toshkent farmatsevtika instituti
Respublika sud tibbiy ekspertiza ilmiy amaliy markazi Buxoro filiali

✓ **Rezyume**

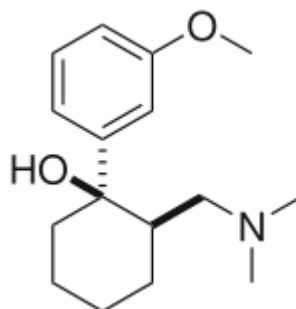
Tramadolni thermodesorption sirt ionlashuv spektroskopiya tahlil usuli ishlab chiqildi. Tramadolning spirtli eritmaları $\sim 88 \pm 15^\circ\text{C}$ va $\sim 205 \pm 15^\circ\text{C}$ darajasida maksimal ionlanish darajasiga ega ekanligi aniqlandi. Namunada usulning chiziqliligi 5-50 mkg / ml tashkil qildi. Usulning sezgirligi 0,5 mkg / ml ni tashkil qildi. Ishlab chiqilgan usul tramadolni biologik suyuqliklardan aniqlashga tavsiya etildi.

Kalit so'zlar: thermodesorption sirt ionlashuv spektroskopiya, tramadol, biologik suyuqliklar.

Relevance

Trade names: Plazadol, Protradon, Sintradon, Tramal, Tramolin, Tramundin retard. Chemical

formula: $\text{C}_{16}\text{H}_{25}\text{NO}_2$. Chemical name: 2 - [[Dimethylamino] methyl] -1- [3-methoxyphenyl] cyclohexanol.



Tramadol is a bluish-yellow crystalline powder substance. Insoluble in water, soluble in alcohol. Begins to liquefy at 183 ° C. Molecular mass: 326.8 [1,9].

Tramadol, sold under the brand name Ultram among others, is an opioid pain medication used to treat moderate to moderately severe pain. When taken by mouth in an immediate-release formulation, the onset of pain relief usually begins within an hour. It is also available by injection. It may be sold in combination with paracetamol (acetaminophen) or as longer-acting formulations [1,2,3].

As is typical of opioids, common side effects include constipation, itchiness, and nausea. Serious side effects may include seizures, increased risk of serotonin syndrome, decreased alertness, and drug addiction. A change in dosage may be recommended in those with kidney or liver problems. It is not recommended in those who are at risk of suicide or in those who are pregnant [2,3]. While not recommended in women who are breastfeeding, those who take a single dose should not generally stop breastfeeding [4]. Tramadol is converted in the liver to O-desmethyltramadol (desmetramadol), an opioid with stronger binding to the μ -opioid receptor [2,5]. Tramadol is also a serotonin–norepinephrine reuptake inhibitor (SNRI).[2,6]

Tramadol was patented in 1963 and launched under the name "Tramal" in 1977 by the West German pharmaceutical company Grünenthal GmbH. In the mid-1990s, it was approved in the United Kingdom and the United States. It is available as a generic medication and marketed under many brand names worldwide [6,7]. In 2018, it was the 25th most commonly prescribed medication in the United States, with more than 24 million prescriptions [8].

Tramadol belongs to the group of benzodiazepines and is widely used in medical practice in schizophrenia, tramadol-induced psychoses, anxiety, sleep disorders. Long-term and excessive use of the drug leads to fatigue, drowsiness, memory impairment, headache, dizziness, dry mouth, tachycardia, thirst, vomiting, fever [9]. Tramadol is associated with the increased suicide risk in different age groups: in

youth, adolescents and adults. In connection with this the study of tramadol in the biopharmaceutical and chemical and toxicological regard is the crucial task. The purpose of this study is to develop the analytical procedure for tramadol by thermodesorption surface-ionizing spectroscopy (TDSIS) method and the application in the study of biological liquids.

Experimental part. For the study the method of thermodesorption surface-ionization spectroscopy was used. The essence of the method lies in the temperature-programmed regime of evaporation of molecules of required substances in the extracts from biological samples with their subsequent entry the surface ionization detector, the signals of which are recorded in the form of thermodesorption spectra. These thermodesorption spectra are quite specific for certain test substances. The basis for registration is the principle of operation of surface-ionization detector. In the diode detector as the anode there is thermo emitter, and as the cathode – there is the collector of positive ions. While passing through the diode of the analyzed mixture, the molecules entering the surface of the emitter can be desorbed in the form of ions that are delivered to the collector by the electric field for registration [10,11].

In the detector, due to its high selectivity for the ionization potential the molecules of organic solvents (alcohols, ketones, aldehydes, esters, hydrocarbons, etc.) and simple gases are practically not ionized by surface ionization. The detector allows to register only the molecules of nitrogen bases, the derivatives of which are many narcotics, alkaloids and other synthetic nitrogen compounds [11,12].

The authenticity of the substances is established according to the effective temperature of desorption using standard samples of the studied drugs.

For the detection of tramadol by the method thermodesorption surface-ionization spectroscopy (TDSIS) the analysis was performed under the following conditions: the emitter – oxidized molybdenum, having iridium in its composition; emitter voltage – 405 V; emitter temperature – 390-420 °C; temperature of evaporation – 20-505

°C; air flow – 50 l/hour, (the voltage of the compressor is 12 V); volume of the test sample taken for analysis - 1.0 µl; analysis time – 3 minutes; recording of the spectra is performed directly by using computer program.

To conduct the study the standard solutions of tramadol were prepared. Accurately weighed quantity of 0,05 tramadol is dissolved in 96% ethyl alcohol in 10 ml flask. Solution is diluted with 96% ethyl alcohol to the mark. From this

solution working standard solution (50 µg/ml) was prepared and from which 1 µl of solution was taken by micro syringe and injected into cylindrical cavity of evaporative tape of PII-N-S “Iskovich-1” apparatus, and thermodesorption surface-ionization spectra were received. At the temperature of $\sim 88 \pm 15^\circ\text{C}$ and $\sim 205 \pm 15^\circ\text{C}$ the appearance of peaks was observed typical for tramadol (Figure 1.).

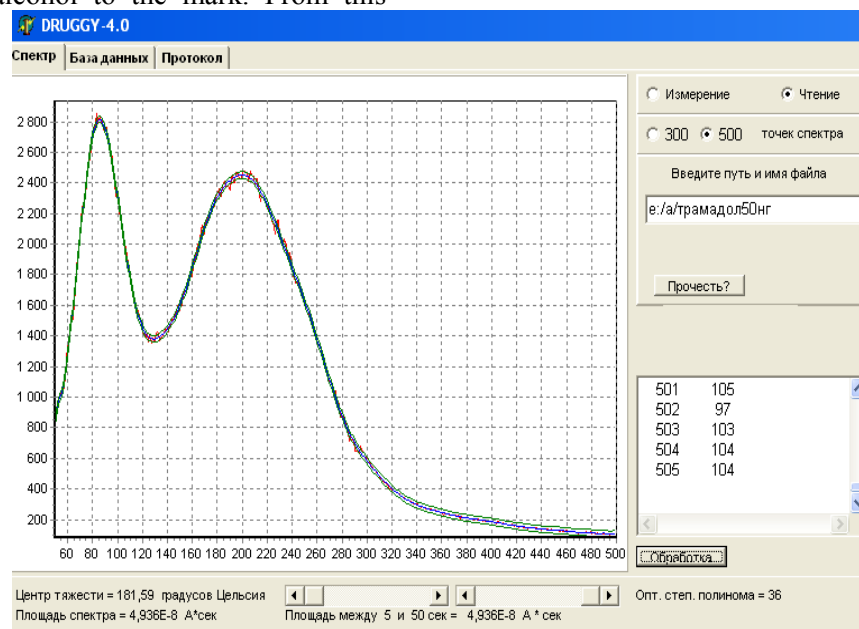


Fig 1. TDSI spectra of tramadol

The obtained thermodesorption spectra were recorded as the references to the database of the computer. The sensitivity of the method is within 0,5 µg/ml range.

Further, we examined the specificity of the conditions of tramadol analysis by TDSIS method.

The temperature of the surface-ionization spectrum of tramadol was differ from the above temperatures of the studied antidepressants. The results are shown in table 1.

Table 1.

The results of study of specificity of the conditions of tramadol analysis by TDSIS method.

Test substance	Temperature of maximum ionization, °C
Tramadol	$\sim 88 \pm 15^\circ\text{C}$ and $\sim 205 \pm 15^\circ\text{C}$
Heroin	$\sim 150 \pm 10^\circ\text{C}$
Morphine	$\sim 192 \pm 15^\circ\text{C}$
Codeine	$\sim 152 \pm 15^\circ\text{C}$
Haloperidol	$\sim 184 \pm 15^\circ\text{C}$

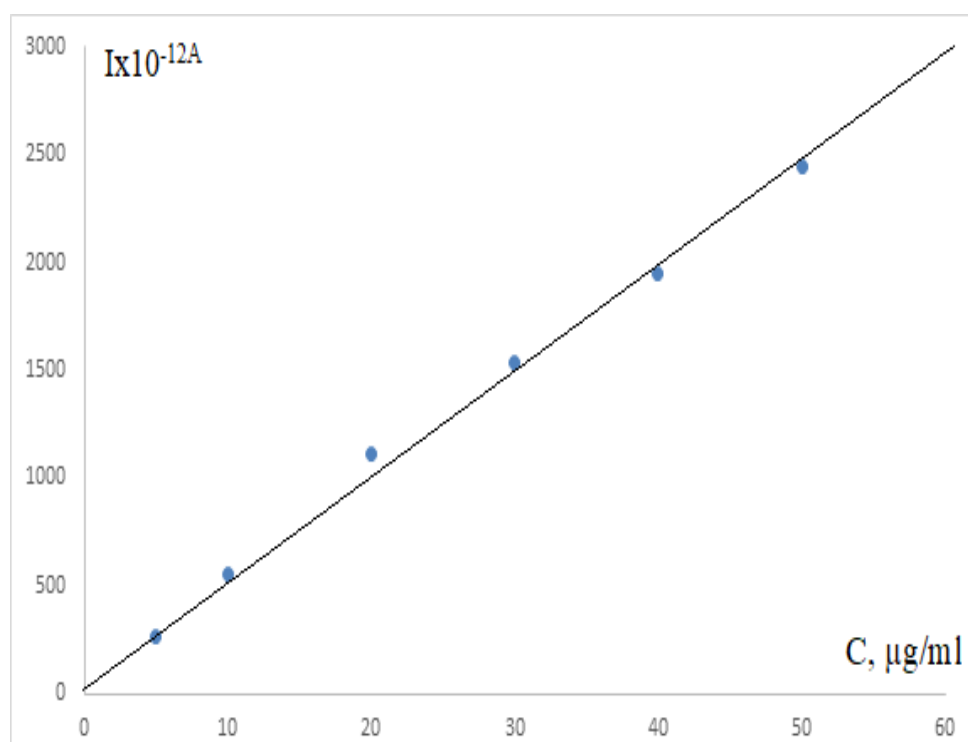
Quantitative determination was carried out according to calibration graph drawn up according to the exact concentration of the standard nominal solution. To construct the calibration curve 1 ml of standard alcohol solution in the concentrations of 5, 10, 20, 30, 40, 50 µg/ml, respectively by using

micro syringe is injected into the cylindrical cavity of the evaporative tape of PII-N-S “Iskovich-1” apparatus and their average values are obtained (based on the peak of tramadol at $\sim 205 \pm 15^\circ\text{C}$). The results of the analysis are given below in table 2 and on Fig.2.

Table 2.

The results of study of the linear dependence of tramadol analysis conditions by TDSIS analysis
(tramadol $\sim 205 \pm 15^\circ\text{C}$) $n=5$)

Solution concentration, $\mu\text{g/ml}$ C,	Amount of tramadol , ng	The height of TDSI spectra (at current intensity ($I \times 10^{-12}\text{A}$)).
5	5	261
10	10	551
20	20	1108
30	30	1536
40	40	1953
50	50	2441



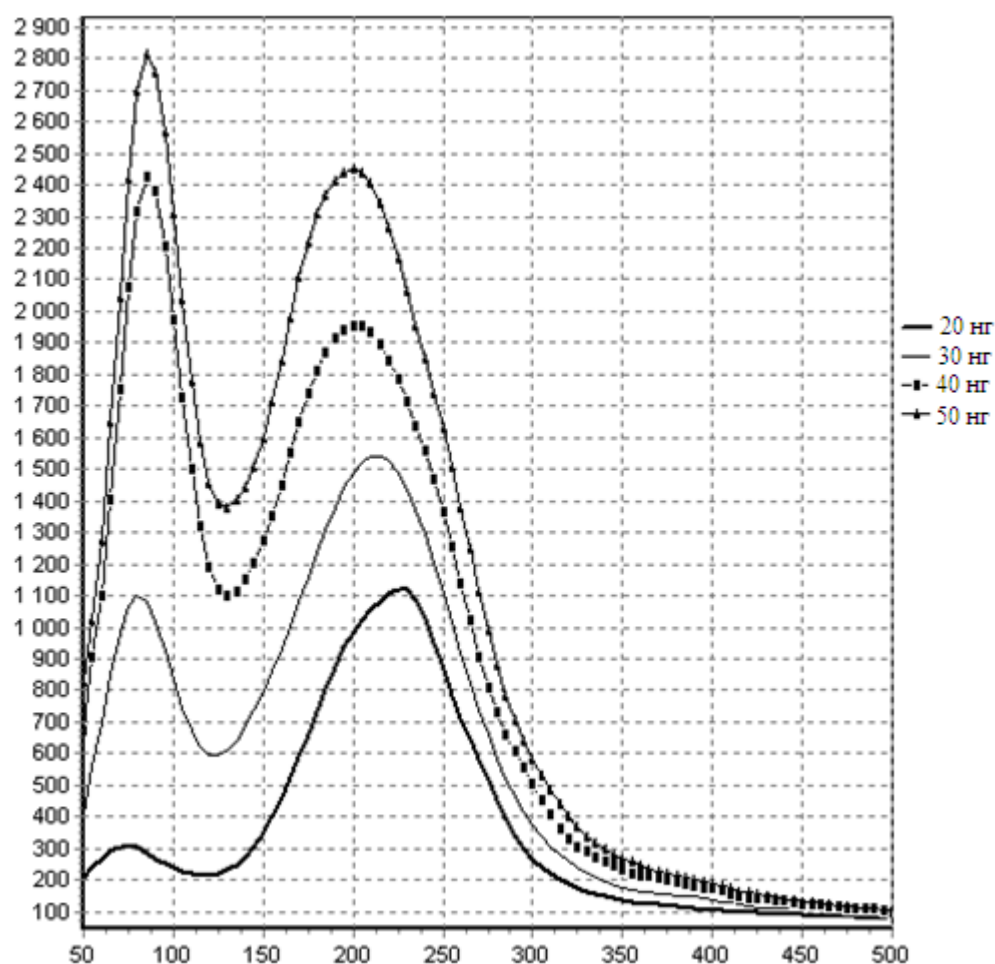


Fig. 2. Graph of TDSI tramadol spectra height dependence on the solution concentration.

After quantitative determination of tramadol by TDSIS method metrological calculation was conducted. The results are shown in table 3.

Table 3.

The results of study of accuracy and reproducibility of tramadol analysis conditions by TDSIS analysis

Preparation amount, $\mu\text{g/ml}$	Obtained amount		Temperature of maximum ionization, $^{\circ}\text{C}$	Results of metrological calculation
	ng	%		
30	30,12	100,40	205	$f = 5$ $T_{(95\%,5)} = 2,57$ $X_{\text{mean}} = 101,18$ $S^2 = 3,3630$ $S = 1,8338$ $S_x = 0,7487$
30	30,91	103,03	206	
30	31,07	103,56	206	
30	29,74	99,13	204	

30	30, 43	101,43	205	$\Delta X_{\text{mean}} = 1,9241$ $\varepsilon = 1,9017$
30	29, 85	99,50	204	

Thus, in the result of the analysis of tramadol TDSIS we have $X_{\text{mean}} = 101,18\%$, the average relative error is $\varepsilon = 1,9017 \%$.

In the next stage of study the verification of the developed procedure was conducted in the analysis of tramadol extracted from biological fluids (blood and urine).

Conclusions

The procedure of tramadol detection has been developed by the method of thermodesorption surface-ionization spectroscopy. Here it was established that alcoholic solutions of tramadol at $\sim 88 \pm 15^\circ\text{C}$ and $\sim 205 \pm 15^\circ\text{C}$ have maximum absorption.

2. The indicators such as specificity, accuracy, reproducibility, linear dynamic range and mean result accuracy have been studied. Linear dynamic range is in the interval of concentration of 5-50 $\mu\text{g/ml}$ in the sample. The sensitivity of the method is 0,5 $\mu\text{g/ml}$.

3. With the help of calibration curve the quantitative content of tramadol was calculated. It was established that quantitative determination of tramadol by TDSIS method makes up in average $X_{\text{mean}} = 101,18\%$ and $\varepsilon = 1,9017 \%$.

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DIAGNOSTICS OF FUNCTIONAL CHANGES OF THE LEFT VENTRICLE LEADING TO DISORDERS OF THE HEART RHYTHM

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✓ Resume

Changes in blood pressure during the day lead to the development of left ventricular (LV) remodeling, which includes the processes of hypertrophy and dilatation, changes in geometry and impaired contractility of the myocardium, which manifests itself in a violation of its diastolic function. Structural changes in the LV are accompanied by an overload of the left atrium (LA) and is a factor predisposing to the development of rhythm disturbances. Indices of EDV by 9%, LVM by 34% and LVMI by 71% were higher in the group of patients with hypertension and heart rhythm disturbances; LV ejection fraction was 9% lower in relation to patients with AH without cardiac rhythm disturbances.

Key words: left ventricular remodelling, left atrial remodelling, cardiac arrhythmias, arterial hypertension, left ventricular myocardial hypertrophy.

ДИАГНОСТИКА ФУНКЦИОНАЛЬНЫХ ИЗМЕНЕНИЙ ЛЕВОГО ЖЕЛУДОЧКА ПРИВОДЯЩИХ К НАРУШЕНИЯ РИТМА СЕРДЦА

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✓ Резюме,

Изменения артериального давления в течении суток приводит к развитию ремоделирование левого желудочка (ЛЖ), включающее в себя процессы гипертрофии и дилатации, изменения геометрии и нарушения сократительной способности миокарда, которая проявляется в нарушении диастолической его функции. Структурные изменения ЛЖ сопровождаются перегрузкой левого предсердия (ЛП) и является фактором, predisposing к развитию нарушения ритма. Показатели КДО на 9%, ММЛЖ на 34% и ИММЖ ЛЖ на 71% были больше в группе больных с АГ и нарушением ритма сердце, показатель ФВ ЛЖ на 9% ниже по отношению к пациентов с АГ без нарушения ритма сердца.

Ключевые слова: ремоделирование левого желудочка ремоделирование левого предсердия, нарушения ритма сердца, артериальная гипертензия, гипертрофия миокарда левого желудочка.

YURAK RITMNING BUZILISHIDA CHAP K, ORINCHANING FUNKTSIONAL ŪZGARISHLARINING DIAGNOSTIKASI

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Kun davomida qon bosimining o'zgarishi gipertrofiya va dilatatsiya jarayonlarini, geometriyadagi o'zgarishlarni va miyokardning kontraktilligini buzadigan chap qorincha (LV) qayta qurish rivojlanishiga olib keladi, bu uning diastolik funktsiyasining buzilishida o'zini namoyon qiladi. LVdagi tarkibiy o'zgarishlar chap atriumning (LA) ortiqcha yuklanishi bilan birga keladi va bu ritm buzilishlarini rivojlanishiga moyil bo'lgan omil. Gipertenziya va yurak ritmining buzilishi bilan og'rigan bemorlar guruhida EDV ko'rsatkichlari 9% ga, LVM 34% ga va LVMI 71% ga yuqori bo'lsa, LVEF yurak ritmining buzilishi bo'lmagan gipertoniya bilan og'rigan bemorlarga nisbatan 9% ga kam edi.

Kalit so'zlar: chap qorinchani qayta qurish, chap atriya ni qayta qurish, yurak ritmining buzilishi, arterial gipertenziya, chap qorincha miyokardiyal gipertrofiyasi.

Relevance

Increased blood pressure is the cause of the development of cardiac arrhythmias of ventricular extrasystoles (PVCs), tachycardia, atrial fibrillation (AF). Of particular importance for the development of tachycardia, PVC, AF belongs to structural changes in the atria such as "stunnedness" or stunning myocardium [3]. A natural consequence of arterial hypertension (AH) is the formation of left ventricular hypertrophy (LVH), which leads to an increase in left ventricular (LV) rigidity and worsening of its diastolic relaxation, which leads to LV diastolic dysfunction [1,2].

Co-authors came to the conclusion that any increase in the size of the left atrium (LA) increases the likelihood of developing various rhythm disturbances [11]. And in 1986 M.S. Kushakovskiy described dilatation of the left atrium as a prerequisite for the inevitability of atrial fibrillation [4]. It is known that atrial myocardial dystrophy with their subsequent "primary" and "secondary" (retrograde) expansion create a substrate for sinus rhythm disturbances (SR). However, earlier, in 1949, E. Phillip and S. Levin reported on the possibility of developing paroxysms of tachycardia, atrial fibrillation (AF) in people who do not have any heart disease, except for the tachyarrhythmia itself.

It is known that in hypertension, remodeling of the left ventricle (LV) develops, including the processes of hypertrophy and dilatation, changes in geometry and impairment of its systolic and diastolic functions [5]. Structural changes in the LV are accompanied by LA overload and its dilatation, which, in turn, is a factor predisposing to the development of rhythm disturbances. On the other hand, this rhythm disturbance itself causes LA dilatation [6,7,8]. However, recent research data indicate that a more accurate marker of LA structural remodeling is the LA volume index (LPI) [9, 10]. In the mosaic lesion of the myocardium, there are areas without signs of mechanical activity, but with preserved basic physiological functions. Departure from this ideal geometry dictates the need for early application of diagnostic methods for the "dormant", "stunned" left atrial myocardium.

The aim of the study was to study the features of cardiac arrhythmias in left atrial stunning at the early stages of left ventricular remodeling in hypertensive patients with left ventricular myocardial hypertrophy and hypertension without left ventricular hypertrophy.

Materials and methods

The study was conducted in 73 outpatients with hypertension and rhythm disturbances aged 30 to 56 years (mean age 40.2 ± 2.7 years). The observation period was 6 months. Patients complained of palpitations, recurrent discomfort behind the breastbone, feeling short of breath, and destabilization of blood pressure. A Helter ECG and an ultrasound examination (ECHO KG) were performed. In order to diagnose left ventricular (LV) remodelling, the myocardial mass, myocardial mass index, and relative wall thickness index were determined. To assess the geometric model of the LV, we used the classification (normal LV geometry, concentric left ventricular remodelling - ECD, concentric LV hypertrophy - eccentric LV hypertrophy).

The patients were divided into 2 groups: group 1 - control group ($n = 32$) with hypertension without heart rhythm disturbances. The duration of AH was 4.894 ± 2.21 years, in group 2 ($n = 41$) with hypertension and cardiac arrhythmias - tachycardia, PVC, impaired repolarization of the ventricles. The duration of hypertension in this group was 5.820 ± 3.21 years. In the presented group, during the study, we identified the following variants of heart rhythm disturbances: tachycardia - 10 (24%), frequent ventricular monotopic extra systole - 18 (44%), polytopic - 6 (33%), atrial fibrillation - 13 (32%).

Statistical processing of the obtained results was carried out using the statistical package "Statisticav.6.0". The arithmetic mean (M) and the error of the mean (m) were calculated. The normality of the sample distribution was assessed by the Kolmogorov - Smirnov test. The reliability of the differences between the values was determined using the Student's t-test with a normal distribution of the trait, with the distribution of a trait different from normal - using the nonparametric Mann - Whitney method. For the analysis of qualitative features, Fisher's exact test and χ^2 were used. Differences were considered significant at $p \leq 0.05$.

Results and its discussion

Indicators of systolic (SBP) and diastolic blood pressure (DBP) in patients in group 2 were relatively higher, i.e. by 8.4% and 12% ($p < 0.05$), in relation to patients of group 1 of the study.

In the present work, we revealed normal LV myocardial hypertrophy in the 1st group was found in 3.1% (n = 1), in the 2nd group in 4.8% (n = 2). Changes in geometry among hypertensive patients without cardiac arrhythmias were found in the largest number of patients with concentric myocardial remodeling - 21.9% (n = 7) (Table 1). In the

group of patients with essential hypertension and cardiac arrhythmias, persons with concentric LV hypertrophy (39%) (n = 16) dominated, while concentric remodeling was observed in 29.3% (n = 12). Eccentric hypertrophy 21.9% (n = 9).

Table 1

Types of left ventricular remodeling

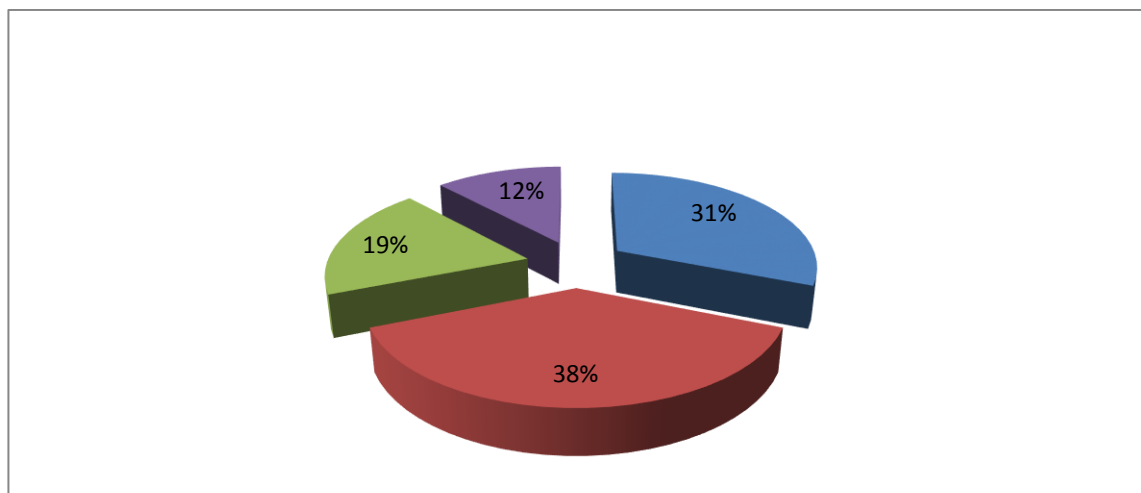
Gru ppy	Kontsentrisheskoy e remodelirovaniye	Kontsentrishesk aya gipertrofiya	Ekstsentrisheskaya gipertrofiya	Normal'n aya gipertrofiya
1.	22%	31%	31%	3%
2.	29%	39%	22%	5%

In the study of echocardiography, myocardial hypertrophy was often observed along the interventricular septum of the median from 1.09-1.12 cm - in 46 people (30.89%), basal 1.12-1.14 cm - in 28 people (18.79%),

anterior-apical sections from 1.14-1.21 cm - in 58 people (38.92%), 1.21-1.3 cm along the interventricular septum and posterior wall - in 17 people. (11.41%).

Distribution of left ventricular myocardial hypertrophy by departments

- mzhp on the median dep.
- mzhp on the basal dep.
- mzhp along the apical-anterior dep.
- on the posterior wall of the LV



In the group of patients with essential hypertension and cardiac arrhythmias, persons with concentric LV hypertrophy (39%) (n = 16) dominated, while concentric remodeling was observed in 29.3% (n = 12). Eccentric hypertrophy 21.9% (n = 9).

In the diagnosis of left ventricular hypertrophy (LVH) in patients with arterial hypertension (AH), the main method today is echocardiography (EchoCG). The role of electrocardiography (ECG) has recently diminished somewhat.

Table 2

Echocardiography indices in examined persons

indicators	1-group GB without LVH		2-group GB without LVH	
	without heart rhythm disturbance	With heart rhythm disturbance	without heart rhythm disturbance	with heart rhythm disturbance
МЖП, мм	10,03±1,11	11,05±1,21	10,20±2,83	11,22±2,33

ЗС ЛЖ, мм	9,34±2,21	10,32±2,26	11,02±1,85	12,29±2,65
Volume ЛП (мл)	34,11±12,54	41,71±14,65	42,66±12,21	46,78±13,32
ФВ ЛЖ, %	60,25±5,37	58,56±5,32	56,63±5,18*	56,56±5,28*
ММЛЖ (В-режим), Г	187,13±16,26	195,26±15,19	195,37±15,28**	201,11±14,12*
ИММЛЖ, Г/м ²	93,29±5,71	95,23±5,64	134,15±6,55**	138,12±6,35**

Note: * p < 0.05, ** p < 0.05 significance of differences between groups

However, due to its general availability, technological simplicity, speed of obtaining information and the possibility of a parallel

assessment of the state of coronary circulation, this method cannot be “put aside”.

Table 3

Hemodynamic parameters of the left ventricle and left atrium

indicators	1 group GB without DD	2group GB with LDD
Ages, years	29,50±6,28	38,95±7,15
Males/Females	43(21/22)	62(37/25)
Office systolic blood pressure, mm Hg	125,19±5,11	134,32±6,35
Office diastolic blood pressure, mm Hg	77,82±6,16	84,12±5,18
Duration of hypertension	2,47±1,19	2,52±1,62
MVP, mm	10,59±1,23	11,24±1,34
ZC LV, mm	10,05±1,33	11,13±1,78
DAC, mm	30,14±5,40	35,15±5,34
KDR, mm	50,21±3,34	53,43±4,29
BWD, ml	118,02±12,73	145,23±10,64
CSR, ml	32,71±15,79	63,79±17,41
LP volume (ml)	33,32±2,23	41,910±3,54*
LP dimensions (mm)	40,62±3,31	43,211±3,61*
LVEF, %	55,26±5,37	51,47±5,28
LVMM (B-mode), g	175,14±4,47	235,12±4,13**
LVMI, g / m ²	98,31±9,12	128,13±7,55**

Note: * p < 0.05, ** p < 0.05 significance of differences between groups

BP c-systolic blood pressure

BP d - diastolic blood pressure

IVS - interventricular septum

LA - left atrium

ALP - left atrial volume

ZS LV - posterior wall of the left ventricle.

EAD / EAD - end systolic / diastolic

dimension.

CSR / EDV - end systolic / diastolic volume.

LVEF - left ventricular ejection fraction.

LVMI - left ventricular myocardial mass index.

It turned out that the LVMM index in the examined patients ranged from 98.6 to 175.13 g / m² (the norm and up to 110 g / m² in women and 130 g / m² in men). In 38% of cases, this indicator exceeded the standard

values. The maximum excess was 63%. At the same time, in 48% of cases an excess of the thickness of the apical and proximal part of the interventricular septum was found, and in 32% of cases there was hypertrophy of the posterior wall.

In our studies, according to echocardiography data, significant changes were only in EDV, EF, LVMM and LVMI. Indices of EDV by 9%, LVM by 34% and LVMI by 71% were higher in the group of patients with hypertension and heart rhythm disturbances, LV ejection fraction was 9% lower in relation to patients with AH without cardiac rhythm disturbances.

Conclusions

Thus, heart damage in hypertensive disease is manifested not only by morph functional remodelling of the left ventricle,

but also by changes in the electrophysiological properties of cardiomyocytes. The defining condition for the occurrence of cardiac arrhythmias is the presence of structural heart disease, which turns into an unstable substrate under the influence of various exo- and endogenous functional factors. Essential hypertension is a significant, potentially modifiable risk factor for cardiac arrhythmias leading to remodelling "stunning" - stunning left atrial myocardium.

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PECULIARITIES OF THE CYP2C19 GENOTYPE AND INFLUENCE ON THE EFFECTIVENESS OF PHARMACOTHERAPY

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✓ Resume

The article presents the results of a genotypic study of patients with chronic gastritis in the Bukhara region by polymorphism of the CYP2C19 gene for the polymorphic marker G681A. It turned out that in the present region, patients with the G/G genotype prevail and, according to the prevalence, type B of chronic gastritis associated with Helicobacter pylori prevails.

Key words: CYP2C19 gene, polymorphism, chronic gastritis, polymorphic marker G681A of the CYP2C19 gene, proton pump inhibitors.

ОСОБЕННОСТИ ГЕНОТИПА ГЕНА CYP2C19 И ВЛИЯНИЕ НА ЭФФЕКТИВНОСТЬ ФАРМАКОТЕРАПИИ

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✓ Резюме

В статье приводятся результаты генотипического исследования больных с хроническим гастритом в Бухарском регионе по полиморфизму гена CYP2C19 по полиморфному маркеру G681A. Оказалось, что в настоящем регионе преобладают больные с генотипом G/G и по встречаемости преобладает тип В хронического гастрита, ассоциированный с Helicobacter pylori.

Ключевые слова: ген CYP2C19, полиморфизм, хронический гастрит, полиморфный маркер G681A гена CYP2C19, ингибиторы протонного насоса.

CYP2C19 GENOTIPI VA FARMAKOTERAPIYA SAMARADORLIGIGA TA'SIRI

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Buxoro davlat tibbiyot instituti

✓ Rezyume

Maqolada G681A polimorfik markeri uchun CYP2C19 genining polimorfizmi bilan Buxoro viloyatida surunkali gastrit bilan og'rigan bemorlarni genotipik o'rganish natijalari keltirilgan. Ma'lum bo'lishicha, ushbu regionda G/G genotipiga ega bemorlar ko'proq bo'lib, Helicobacter pylori bilan bog'liq bo'lgan surunkali gastrit B tipidagi kasallik keng tarqalgan.

Kalit so'zlar: CYP2C19 geni, polimorfizm, surunkali gastrit, CYP2C19 genining G681A polimorfik markeri, proton pompasi ingibitorlari.

Relevance

Recently, the concept of personalized medicine has become increasingly common in the literature [15, 17]. It is an integrated medicine that includes the development of personalized treatments based on genomics, testing for predisposition to diseases, prevention, combining diagnosis with treatment, and monitoring treatment [2, 9, 24]. The goal of personalized medicine is to find a suitable drug for a particular patient and, in some cases, even to develop a treatment regimen for the patient according to his genotype [5, 12, 23].

Enzymes of the P-450 family play an important role in the metabolism of both endogenous compounds (steroids, bile acids, fatty acids, prostaglandins (thromboxane A2, prostacyclin I2), leukotrienes, biogenic amines) and exogenous ones: drugs, poisons, industrial pollution products, pesticides, carcinogens, mutagens, etc.: they are membrane proteins primarily associated with intracellular membranes [14, 26]. Along with the liver, where the greatest amount of cytochrome P-450 is found, it is also found in the intestine,

adrenal glands, kidneys, lungs, some parts of the brain, skin, placenta, and myocardium [13].

Unlike other hemoproteins, which, as a rule, have only one activity and a strictly defined function in the cell, P450, along with monooxygenase, can also exhibit oxidase activity, generating reactive oxygen species in the form of superoxide and hydroxyl radicals, hydrogen peroxide. In this regard, P-450 is sometimes referred to in the literature as a mixed-function oxidase. Currently, more than 1000 isoforms of cytochrome P-450, called isoenzymes, have been isolated. The genes of cytochrome P-450 isoenzymes are located in different chromosomes and occupy different loci in them. To date, about 500 different genes encoding P450 have been identified (Padalko V. I., et al., 2005). There are a large number of polymorphic genes in the human genome, and many of them encode enzymes that metabolize drugs and xenobiotic agents, including carcinogens. According to R. M. Ward and G. L. Kearns (2013), these enzymes are immature at birth and reach the level of adult activity at 5-6 months of life. Among the most well-known are several isoenzymes of the microsomal oxidative system P450 - CYP3A4, CYP2C9, CYP2C19, etc [4, 22]. There are more than 200 variants of alleles of cytochromes involved in the metabolism of drugs in a living organism [11, 21].

Substrates for cytochrome P-450 are almost all medicinal substances, while its isoforms differ from each other in substrate specificity and activity regulators (inhibitors and inducers).

One of the main isoenzymes of cytochrome P-450 is CYP2C19.

In 1994, De Marais et al. for the first time, cytochrome P450 polymorphism was studied on the gene encoding the structure of the enzyme CYP2C19 [25].

The CYP2C19 gene encodes a member of the cytochrome P450 enzyme superfamily, which is an important phase I enzyme widely expressed in endothelial and smooth muscle cells. It is a key enzyme responsible for the metabolism of many therapeutic drugs, and is thought to play an important role in detoxifying or inactivating potential carcinogens and bioactivating some environmental procarcinogens to form toxic DNA-binding metabolites [3].

Genetic polymorphism defines the three main phenotypes of metabolizers (drug users): extensive, slow, and fast [1]. Extensive metabolizers are individuals with a normal metabolic rate of the drugs in question. They are most often homozygous for the wild allele of the corresponding enzyme. Examples of cytochrome P450 genes involved in drug metabolism [8]. Slow

metabolizers (sometimes zero) are characterized by a reduced metabolic rate of the drug in question. From the genetic point of view, they are homozygous (with an autosomal recessive type of inheritance) or heterozygous (with an autosomal dominant type of inheritance) for the mutant (slow) allele of the corresponding enzyme. In such individuals, the synthesis of the enzyme is absent or an inactive (defective) enzyme is synthesized, as a result of which the drug accumulates in high concentrations, which leads to the appearance of undesirable side reactions [7]. Hence, it is clear that for slow metabolizers, the dose of the drug should be lower or another drug is prescribed. Fast (or overactive) metabolizers are characterized by an increased metabolic rate of certain drugs. Basically, these are homozygotes (with an autosomal recessive type of inheritance) or heterozygotes (with an autosomal dominant type of inheritance) for the fast allele of the corresponding enzyme [16].

Thus, the polymorphic variability of this gene determines the different enzymatic activity of the CYP2C19 isoenzyme and, accordingly, the presence of slow, intermediate, fast, and ultrafast xenobiotic metabolizers in the population [10, 18].

Proton pump inhibitors (PPIs), such as omeprazole, lansoprazole, rabeprazole, esomeprazole, and pantoprazole, are metabolized by cytochrome P450 (CYP2C19) isoenzyme 2C19 in the liver. There are genetic differences that affect the activity of this enzyme [6].

Thus, the use of proton pump inhibitors in people with peptic ulcer disease may be less effective if the patients are carriers of a genetic variant associated with a high metabolic rate of the drug. In this case, the drug will be quickly disposed of by the enzyme [20].

Thus, the CYP2C19 gene is the main factor that ensures the metabolism of proton pump inhibitors [19].

However, there are no studies on the influence of the patient's genotype based on the allelic variant of the CYP2C19 gene on the type and course of chronic gastritis (HCG) in patients living in the Bukhara region, which was the basis for this study.

Material and method

To solve the tasks set a comprehensive examination of 100 patients with chronic gastritis who were on inpatient treatment and follow-up in the Bukhara regional IPKB was conducted. The control group consisted of 96 healthy people who did not have a history of pathology from the digestive tract, living in the Bukhara region,

corresponding by sex and age to the examined group of patients with chronic gastritis.

The age of patients with chronic gastritis ranged from 18 to 67 years.

The initial stage of our work was the selection and optimization of the system of oligoprimes for the detection of the rs4244285 polymorphism of the CYP2C19 gene by the polymorphic marker G681A. The nucleotide sequences of detection of the rs4244285 polymorphism of the SUR2C19 gene were selected using the program "Oligo v. 6. 31" (Molecular Biology Insights Inc., USA) and synthesized in Sintol LLC and NPF "Litech" (Moscow). The rest of the components were purchased from the world's leading manufacturers - Serva (Germany), Sigma (USA), Helikon NPF Litekh, Sibenzim (Russia), etc.

The adaptation of primer systems for standard PCR analysis was carried out using PCR analyzers "AppliedBiosystems 2720" (USA) and Rotor-Gene 6000 (Corbett Australia). For amplification, a reaction mixture with a volume of 25 µl was used, which contained 2.5 µl of 1 OxTaq buffer (67 mMtris-HCl (pH 8.8), 16.6 mM (NH₄)₂SO₄, 2.5 mM MgCl₂, 0.01% Tween-20), 0.1 µg of genomic DNA, a mixture of dNTP (dATP, dGTP, dCTP, dTTP of 200 µM each), 1 unit. Termusaquaticus DNA polymerase (manufactured by Silex, Moscow) and 5-10 pM locus-specific

oligonucleotide primers. The temperature and time parameters were changed depending on the pairs of oligoprimes.

For detection of rs4244285 of the SUR2C19 gene: preliminary denaturation-94°C (1 min. 1 cycle), 35 amplification cycles: 93°C (10 sec.) – denaturation, 64°C (10 sec.) – annealing of primers, 72°C (20 sec.) – elongation, and final synthesis-72°C (1 min. 1-cycle), 10 min. storage.

Polymorphic regions of the SUR2C19 gene were detected using the PCR-SSP method.

The specificity and number of amplified fragments were tested by agarose gel electrophoresis.

Results and discussion

It is known that one of the variants of the CYP2C19*2 (rs4244285) gene under study consists in replacing guanine (G) with adenine (A) at the 681 (681G-A) position in exon 5. Using a modified detection method, we investigated the polymorphism G681A of the gene CYP2C19, which has variants of the genotypes A/A, GG, G/A.

The distribution of genotypes of the polymorphic locus G681A of the CYP2C19 gene in the Bukhara population did not correspond to the expected Hardy-Weinberg equilibrium, $\chi^2 = 7.0$ $p = 0.008$.

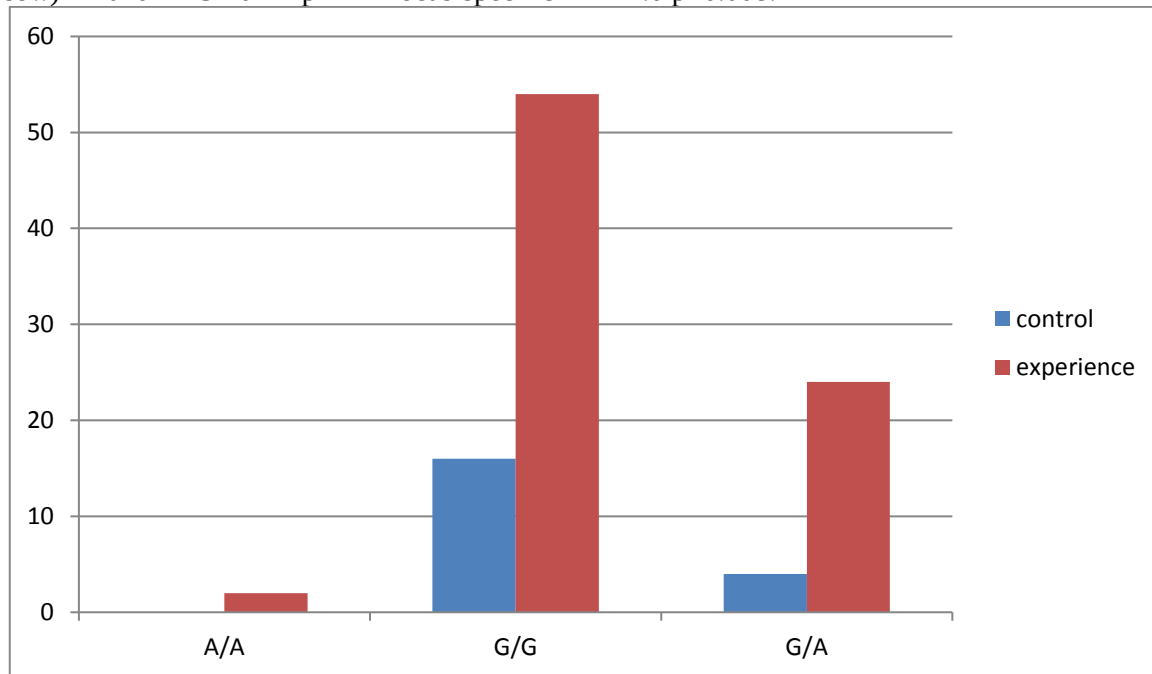


Figure 1 . The frequency of distribution of the genotypes of the CYP2C19 gene in patients with chronic gastritis, regardless of the type of gastritis

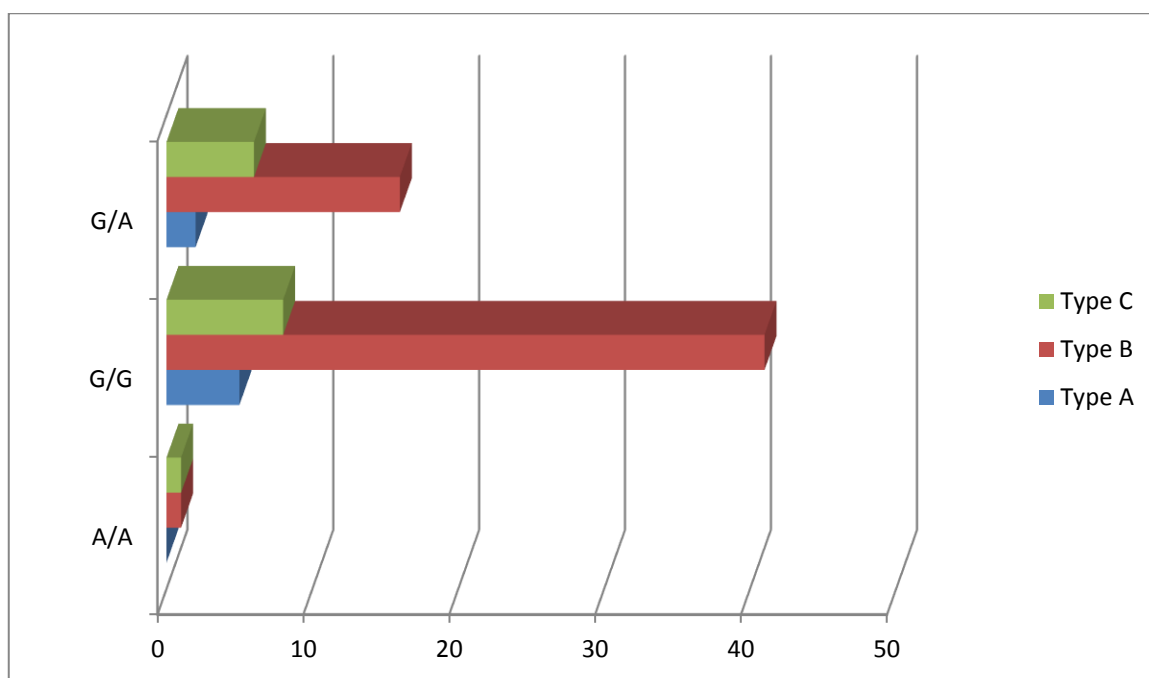


Figure 2. Distribution of types of chronic gastritis depending on the genotypes of the CYP2C19 gene

It should be noted that, in the structure of the group of patients with chronic gastritis (HCG) studied by us, regardless of the type of gastritis, it was revealed (Figure 1) that carriers of the "wild type" allele CYP2C19 GG made up more than 67%, carriers of the heterozygous allele CYP2C19 G/A made up 30%, carriers of the homozygous allele CYP2C19 A/A made up 2.5%. Thus, the frequency of occurrence of the G allele corresponded to 82%, while the frequency of occurrence of the A allele was about 17% in patients with chronic gastritis

It should also be noted that the A/A genotype of the CYP2C19 gene was not detected in the representatives of the control-healthy group.

When determining the occurrence of types of CG by allelic variants of the CYP2C19 gene, it turned out (Figure 2) that type B CG occurs in all genotypic variants: in patients with the G/G genotype – about 76%, in patients with the G/A genotype – about 67 %, in patients with the A/A genotype – 50% of cases, while type C CG is more detected in patients with the A/A genotype – 50%, and in heterozygous genotypic variant G/A-25% and in patients with the homozygous genotype G/G is about 15%. If type A HCG in patients with genotypes G/G and G/A is determined in the range of 8-9%, then in patients with genotype A/A, it was not determined.

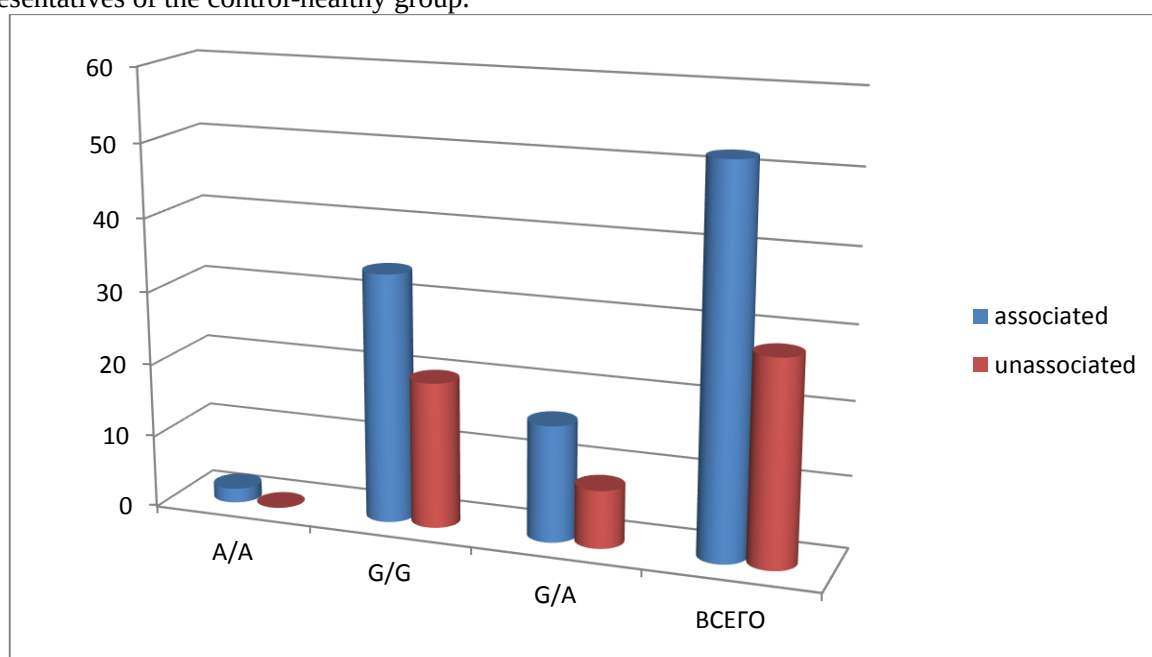


Figure 3. Frequency of distribution of the genotypes of the CYP2C19 gene in chronic gastritis, depending on the association of *Helicobacter pylori*

It should be noted that in the development of hCG, a special place is occupied by the bacteria *Helicobacter pylori* (HP) and such HCG is called "associated HP HCG". There is also a distinction between "unassociated HP hCG". When determining the genotype of the SUR2C19 gene by the polymorphic variant G681A comparatively (Figure 3), in patients with associated HP HCG, the heterozygous genotype G/A was detected in about 67% of cases, and the homozygous genotype

G/G in 63% of patients, while in the non-associated group of patients, these genotypes were present in 33 and 37% of cases. It should be noted that the A/A genotype is found only in patients with associated HP HCG.

Our studies have shown that in the development of HCG, the presence and activity of the patient's genotype of the SUR2C19 gene for the allelic variant G681A for the duration of the disease occurs (Fig. 4).

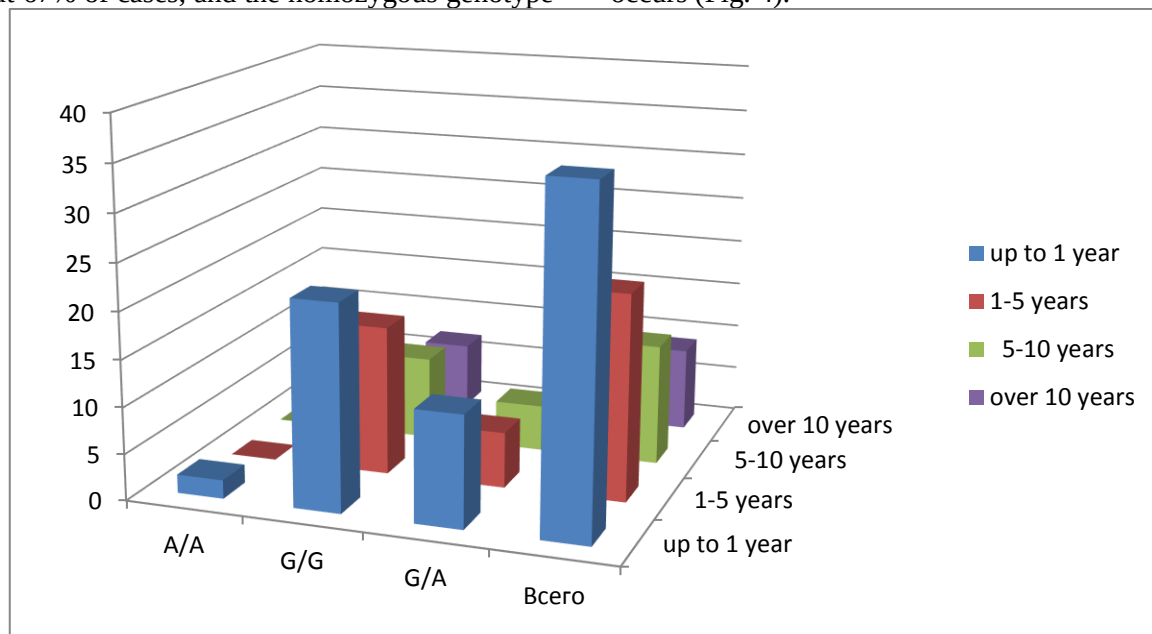


Figure 4. Frequency of distribution of the genotypes of the SUR2C19 gene in chronic gastritis, depending on the duration of the medical history

It turned out that patients with genotype G/A make up exactly half of patients who are ill for less than 1 year; ¼ of patients who are ill for up to 5 years; about 21% of patients with 5-10 years of "experience" of the disease and 4% of patients who suffer from HCG for more than 10 years. So, patients with genotype G / G in patients with a history of the disease up to 1 year are about 40%, patients with a similar genotype and with an established diagnosis of HCG with a 5-year history are about 30%; patients with a history up to 10 years are about 17% and with a history over 10 years are about 13%. And the A/A genotype is found only in patients with an established diagnosis of HCG for less than 1 year.

Conclusions

Thus:

- the occurrence of carriers of the "wild type" genotype G / G of the gene SUR2C19 for the allelic variant G681A is the main number of

patients with HCG in the Bukhara region and this genotype differs in the duration of the disease;

- in all genotypic variants of the allelic variant of the CYP2C19 gene, type B HCG is found and *Helicobacter pylori*-associated HCG is determined.

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THE PATIENT'S GENOTYPE IS THE MAIN INDICATOR FOR CHOOSING AN EFFECTIVE AND SAFE PHARMACOTHERAPY FOR CHRONIC GASTRITIS

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Bukhara State Medical Institute named after Abu Ali ibn Sino

✓ **Resume,**

The article presents the results of a genotypic study of patients with chronic gastritis in the Bukhara region by the polymorphism rs1045642 of the MDR-1 gene by the polymorphic marker C3435T. It turned out that in the present region, patients with the CT genotype prevail and the type B of chronic gastritis prevails in terms of occurrence. When studying the effectiveness of the classical pharmacotherapy used, depending on the genotype of a patient with HCG, the disease ends with recovery mainly in patients with the SS genotype.

Key words: MDR-1 gene, polymorphism, chronic gastritis, polymorphic marker C3435T of MDR-1 gene, P-glycoprotein.

ГЕНОТИП ПАЦИЕНТА – ОСНОВНОЙ ПОКАЗАТЕЛЬ ДЛЯ ВЫБОРА ЭФФЕКТИВНОЙ И БЕЗОПАСНОЙ ФАРМАКОТЕРАПИИ ХРОНИЧЕСКОГО ГАСТРИТА

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✓ **Резюме,**

В статье приводятся результаты генотипического исследования больных с хроническим гастритом в Бухарском регионе по полиморфизму rs1045642 гена MDR-1 по полиморфному маркеру C3435T. Оказалось, что в настоящем регионе преобладают больные с генотипом СТ и по встречаемости преобладает тип В хронического гастрита. При изучении эффективности применяемой классической фармакотерапии в зависимости от генотипа больного с ХГ заболевание заканчивается выздоровлением в основном у пациентов с генотипом СС.

Ключевые слова: ген MDR-1, полиморфизм, хронический гастрит, полиморфный маркер C3435T гена MDR-1, P-гликопротеин.

BEMORNING GENOTIPI - SURUNKALI GASTRITNING SAMARALI VA XAVFSIZ FARMAKOTERAPIYASINI TANLASH UCHUN ASOSIY KO'RSATKICHDIR

Ochilova G.S., Musaeva D.M.

Abu Ali ibn Sino nomidagi Buxoro davlat tibbiyot instituti

✓ **Rezyume**

Maqolada MDR-1 genining rs1045642 polimorfizmi C3435T polimorf markeri bo'yicha Buxoro viloyatida surunkali gastrit bilan og'rigan bemorlarda o'tkazilgan genotipik tadqiqotlar natijalari keltirilgan. Ma'lum bo'lishicha, ushbu regionda bemorlar asosan CT genotipli bo'lib, surunkali gastritning B turi ko'proq tarqalgan. Surunkali gastrit bilan og'rigan bemorning genotipiga qarab ishlatiladigan an'anaviy farmakoterapiya samaradorligini o'rganayotganda kasallik asosan CC genotipi bo'lgan bemorlarda sog'ayish bilan tugaydi.

Kalit so'zlar: MDR-1 geni, polimorfizm, surunkali gastrit, MDR-1 genining polimorf markeri C3435T, P-glikoprotein.

Relevance

It was revealed that the MDR-1 gene is one of the main genes that affect the effectiveness of pharmacotherapy [2,4,22]. The MDR-1 gene (multidrug-resistance gene) encodes P-glycoprotein (P-gp), which is located in the cytoplasmic membrane of various cells, performs the function of an ATP-dependent pump and promotes the removal of various xenobiotics outside the cell [7, 21, 26]. Therefore, the expression of the MDR-1 gene contributes to the resistance of the cell to the drug used and plays an important role in the effectiveness of therapeutic measures. Namely, the P-gp protein encoded by the MDR-1 gene, dictates the activity of the drug absorption process, being in the membrane of normal cells of the body. The expression of this protein determines the pharmacokinetics of drugs and, in due course, the effectiveness of pharmacotherapy [1,9,12].

It is known from the literature that the MDR-1 gene has several polymorphisms - T3435C, G2677T, C1236T [3,8,11]. Among them, the C3435T polymorphism is directly related to the expression of the P-gp protein encoded by the MDR-1 gene [6, 10, 25]. The genotypic variants of SS, TT, and CT of this polymorphism have a huge impact on the pharmacokinetic parameters of the drugs used, and, accordingly, on the effectiveness of pharmacotherapy [16,20].

When conducting a subpopulation analysis, it was found that in Europeans, the activity of P-gp was higher in carriers of the SS genotype, and in Japanese-in carriers of the TT genotype [5,15,17].

According to Russian scientists, in patients with rheumatoid arthritis with the TT genotype, the effectiveness of pharmacotherapy is 2.9 times higher than in patients with the SS and CT genotypes [13,24]. The same results were obtained by Japanese researchers. A subpopulation analysis revealed that the SS genotype prevails in Europeans, while the TT genotype prevails in Japanese [14,27]. Therefore,

we think it is necessary to establish the genotypic affiliation of the patient for the prognosis of the effectiveness of pharmacotherapy [18,19].

These circumstances were the reason for choosing the direction and purpose of this study, i.e., to study the genotype of patients with chronic gastritis by the polymorphic marker C3435T of the MDR-1 gene and the association of polymorphism with the effectiveness and safety of therapy for chronic gastritis in people living in the Bukhara region.

Material and method

In accordance with the objectives of the dissertation, a comprehensive examination of 100 unrelated patients with HCG who were on inpatient treatment and follow-up in the 1 – clinic of BuhGMI-in BOMPKB was conducted. These patients made up the main group.

The control group consisted of 50 healthy unrelated and without a history of gastrointestinal pathology persons living in the Bukhara region, corresponding by sex and age to the examined group of patients with chronic gastritis.

The MDR - 1 gene polymorphic marker C3435T was analyzed by standard PCR analysis [23].

A comparative analysis of 50 samples of control DNA revealed a positive correlation between our results and the data obtained by the standardized test system of PF Litech (Moscow). Heterozygous and homozygous genotypes were detected in the same DNA samples, the negative result was confirmed by both methods (high comparability of results). The revealed minor differences were statistically insignificant ($P>0.05$).

Results and discussion

When studying the rs1045642 polymorphism of the MDR-1 gene by the polymorphic marker C3435T in patients with chronic gastritis living in the Bukhara region (fig. 1), the CT genotype prevails (59%).

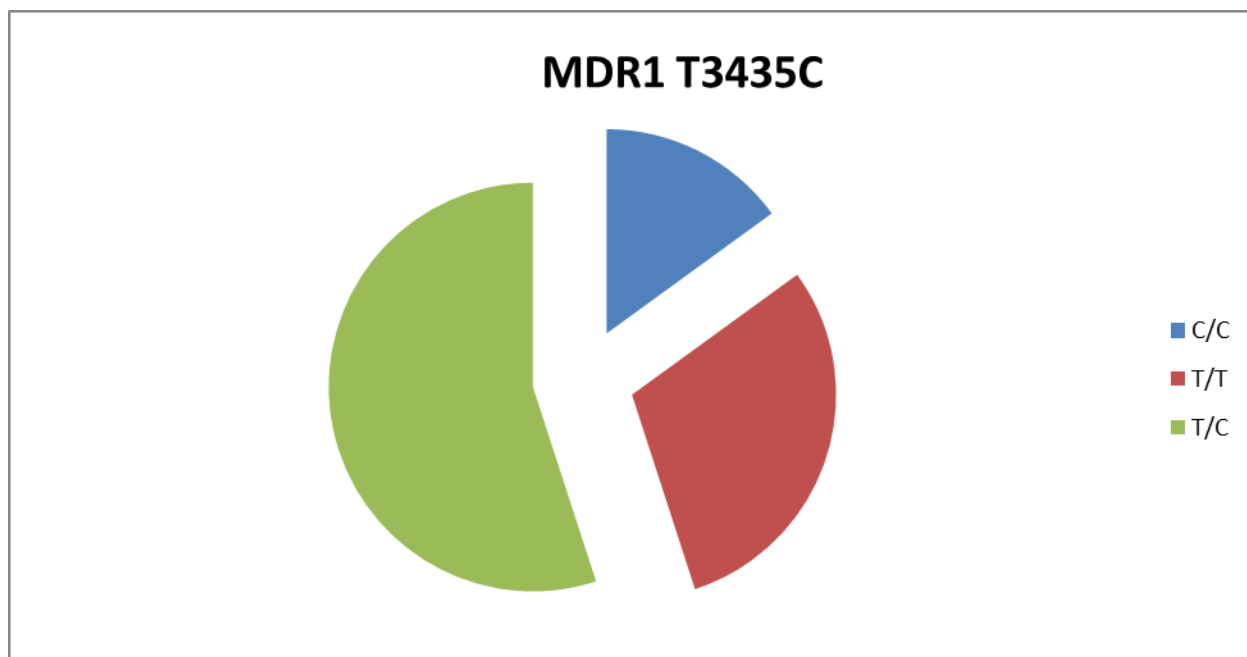


Figure 1. Frequency of distribution of genotypes of the C3435T polymorphism of the MDR-1 gene in patients with chronic gastritis, regardless of the type of gastritis

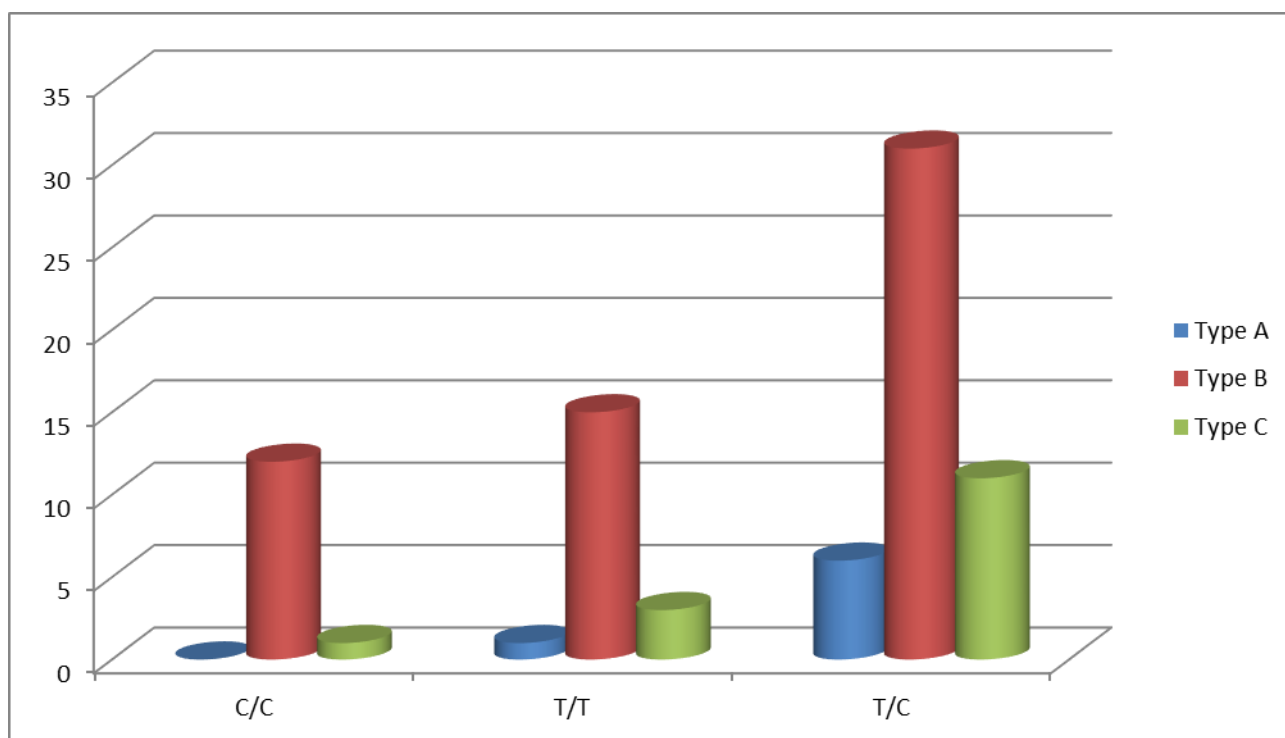


Figure 2. Distribution of types of chronic gastritis depending on the genotypes of the C3435T polymorphism of the MDR-1 gene

When studying the type of HCG, depending on the genotypic affiliation of the patient by the T3435C polymorphism of the MDR1 gene (fig.2), the results showed that in patients with the SS genotype, type B CG prevails (92%), while type C CG was determined in 8% of patients, and there were no patients with the AA

genotype. Also, 79% of patients with the TT genotype had type B CG, and type C CG was 16%, and type A CG was 5%. In patients with the CT genotype, 65% of cases showed type B CG, while in patients with this genotype, type C CG was 13% and type A CG was 12%.

When studying the effectiveness of the classical pharmacotherapy used depending on the genotype of a patient with HCG (fig. 3), we determined that in 46% of patients with the SS genotype, the disease ends with recovery, and in

39% with a similar genotype, there is an improvement, and only in 15% of patients, pharmacotherapy does not give results – without improvement. But there were no aggravations or complications.

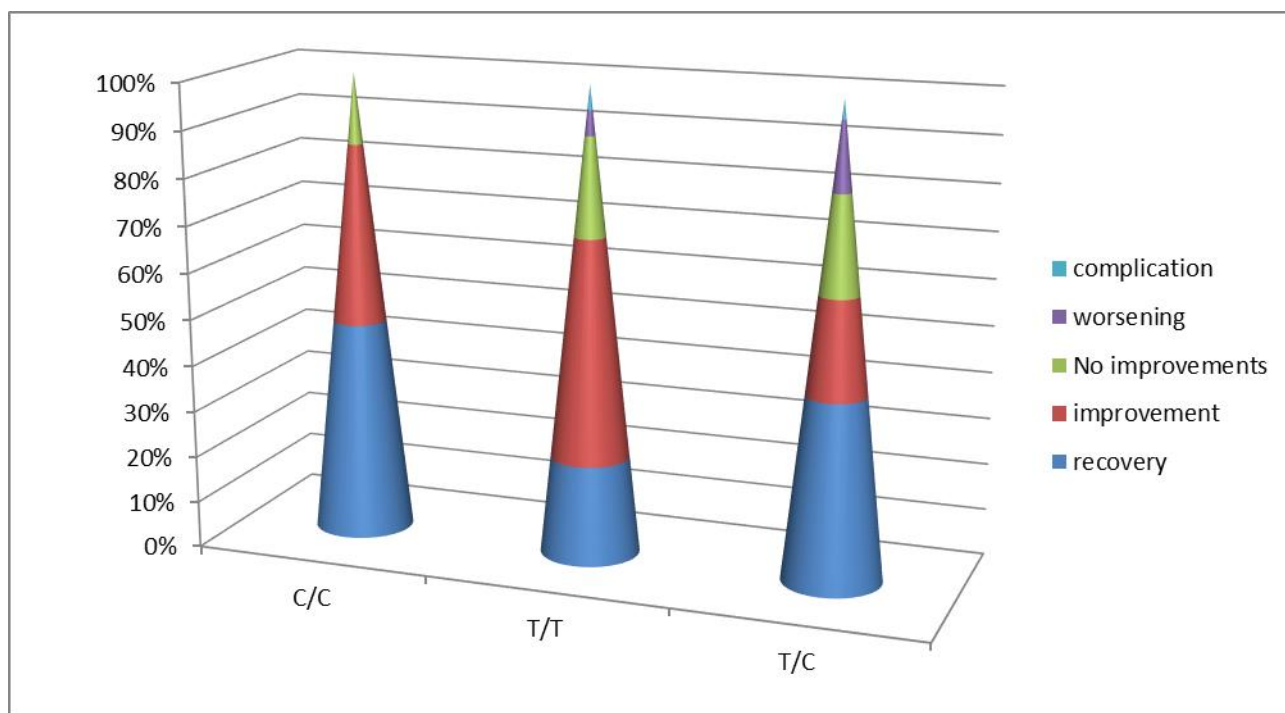


Figure 3. Results of treatment of chronic gastritis and their relationship with the frequency of distribution of genotypes of the C3435T polymorphism of the MDR-1 gene in chronic gastritis

Also, in patients with the TT genotype in 47% of cases there was an improvement, but if in 21% of patients the disease ended in recovery, then in the same percentage of patients there were no improvements from pharmacotherapy, and in 5% of patients there were worsenings, and in 5% of patients there were complications.

In patients with the CT genotype, recovery was 40%, and 20% of cases showed improvement, but in the remaining 20% of patients, no improvement was observed, and 16% had deterioration, and 4% of patients had complications.

Conclusions

Thus, it turned out that patients with the CT genotype predominate in the present region. In terms of occurrence, type B of chronic gastritis prevails. The disease ends with recovery mainly in patients with the SS genotype.

The results of the studies show that in order to choose an effective and safe pharmacotherapy for this pathology, the doctor must have information about the patient's genotype based on the polymorphic marker C3435T of the MDR-1 gene.

We believe that the ineffectiveness of the selected pharmacotherapy in the studied group of patients is dictated by the activity of P-gp encoded by the MDR-1 gene, since P-gp directly affects the pharmacokinetics of the drugs used and the effectiveness of the selected pharmacotherapy depends on the patient's genotype in relation to the polymorphisms of the MDR-1 gene – the gene for multidrug resistance.

Since the human genetic apparatus is individual, unique, we believe that such information about the patient contributes to the individualization of treatment, that is, the personification of pharmacotherapy, which will serve as the basis for safe and highly effective treatment, which in modern medicine is considered relevant and a requirement of the time.

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**SPECIFICITIES OF GENOTYPIC VARIATIONS OF CYP2C19 GENE WHILE PEPTIC
ULCER TREATMENT**

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✓ **Resume**

This article presents the results of researches of patients with peptic ulcer disease living in the Bukhara region by genotypic accessories for the CYP2C19 gene. It was found that in all genotypic variations of the gene, the main symptoms of peptic ulcer disease and related diseases do not differ much from each other.

Key words: CYP2C19 gene, variations of CYP2C19, peptic ulcer disease, symptoms of peptic ulcer disease.

**ОСОБЕННОСТИ ГЕНОТИПИЧЕСКИХ ВАРИАНТОВ ГЕНА CYP2C19 ПРИ
ЯЗВЕННОЙ БОЛЕЗНИ**

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✓ **Резюме**

В данной статье приводятся результаты исследований пациентов с язвенной болезнью проживающих в Бухарском регионе по генотипическим принадлежностям по гену CYP2C19. Оказалось, что во всех генотипических вариантах гена основные симптомы язвенной болезни и сопутствующие заболевания мало чем отличаются друг от друга.

Ключевые слова: ген CYP2C19, генотипы гена CYP2C19, язвенная болезнь, симптомы язвенной болезни.

**YARA KASALLIGIDA CYP2C19 GENI GENOTIPIK VARIANTLARINING
XUSUSSIYATLARI**

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Buxoro davlat tibbiyot instituti

✓ **Rezyume**

Maqolada Buxoro viloyatida yara kasalligi bilan og'rigan bemorlarda CYP2C19 genining polimorfizmi genotipik variantlarini o'rganish bo'yicha olib borilgan izlanishlar natijalari keltirilgan. Ma'lum bo'lishicha, ushbu regionda CYP2C19 genining barcha genotipik variantlarida kasallik simptomlari va unga yondosh kasalliklar bir-biridan juda kam farq qilar ekan.

Kalit so'zlar: CYP2C19 geni, CYP2C19 geni genotipi, yara kasalligi, yara kasalligi simptomlari

Relevance

Cytochrome P450 was discovered in 1954-1956 by M. Klingenberg and D. Garfinkel in microsomes of liver in rats [5, 8, 11, 12, 17, 18, 25].

For the first time, in 1994, De Marais et al. was examined and studied cytochrome P450

polymorphism that encode the structure of the enzyme CYP2C19. During of researching of metabolism and clinical efficacy of the anticonvulsant drug S-mephenytoin, it was found that these performances directly depend on the polymorphism of the CYP2C19 gene, which is

expressed in that, due to mutation and replacement of only one nucleotide in the 5th exon of the CYP2C19 gene during the synthesis of CYP2C19 hydroxylase, it becomes shorter by 20 amino acids and consequently, functionally inactive [2, 6, 15, 21, 26].

The CYP2C19 gene is a member of the IIC subfamily of cytochrome P-450 genes, which is involved in the metabolism of a number of drugs: proton pump inhibitors (omeprazole, pantoprazole, lansoprazole, rabeprazole and esomeprazole), antidepressants (tricyclic antidepressants – amitriptyline, clomipramine, imipramine, selective serotonin reuptake inhibitors – citalopram, MAO – moclobemide inhibitor), antiepileptic drugs (diazepam, phenytoin, phenobarbital, clonazepam), nonsteroidal anti-inflammatory drugs (diclofenac, indomethacin), anticoagulants (warfarin), antiplatelet agents (thienopyridines, including clopidogrel), antifungal drugs (voriconazole), β -blockers (propranolol), antitumor drugs (cyclophosphamide), certain hormones (e.g. progesterone), and other medications [3, 9, 20, 24].

The metabolism of proton pump inhibitors mainly occurs in the liver with the involvement of CYP2C9, CYP2C19, CYP2D6 and CYP3A4, which are isoenzymes of cytochrome P450. The polymorphism of the genes of the cytochrome CYP2C19 system is the determining factor that the rate of occurrence and duration of the antisecretory effect of PPIs in patients differ significantly [1, 4, 14, 22].

It was found that in the Russian population, the CYP2C19 gene encoding the metabolism of the proton pump inhibitor is widespread and it turns out that from 8.3 to 20.5% of patients are resistant to a single dose of PPIs [7, 10, 13].

However, there are no studies on the effect of allelic variants of the CYP2C19 gene on the effectiveness of treatment for peptic ulcer disease, which was the basis for this research [16, 27].

Based on the above, the **purpose** of this research is to study the effect of allelic variants of the CYP2C19 gene on the pharmacotherapy of ulcer disease in order to develop a method of differentiated use of PPIs for the treatment of this pathology.

Material and methods

In accordance with the objectives of the article, researched a comprehensive examination of 100 unrelated patients with chronic gastritis who were on treatment and follow-up in the State clinic №1 of the Bukhara State Medical Institute. These patients made up the main group.

The control group consisted of 50 healthy unrelated and non-history of gastrointestinal pathology persons living in the Bukhara region, corresponding by sex and age to the examined group of patients with chronic gastritis.

The polymorphic marker C3435T of the MDR1 gene was analyzed using standard PCR analysis [23].

A comparative analysis of 50 samples of control DNA revealed a positive correlation between our results and the data obtained by the standardized test system of PF Litech (Moscow). Heterozygous and homozygous genotypes were detected in the same DNA samples, the negative result was confirmed by both methods (high comparability of results). The revealed minor differences were statistically insignificant ($P>0.05$).

Result and discussion

We studied the relationship of the genotype for the allelic variant G681A of the researched gene to the symptoms of Chronic gastritis (Fig. 1). It turned out that in patients with genotype A/A, the main clinical manifestations of the disease are fasting pain, belching, feeling of overeating and flatulence – each symptom in 25% of cases, other symptoms were not rare. These symptoms in patients with the G/A genotype were determined from 5% to 18% of patients, while in patients with the G/G genotype, these clinical manifestations occurred on average up to 10% of cases. The predominant clinical manifestations in patients with the G/G genotype were aching pains in the epigastric region (22%) and heartburn (15%), while these symptoms in patients with the G/A genotype were determined in 10% of cases. Other clinical manifestations in patients with genotype G / G and G/A were observed in the range from 2% to 11% of cases.

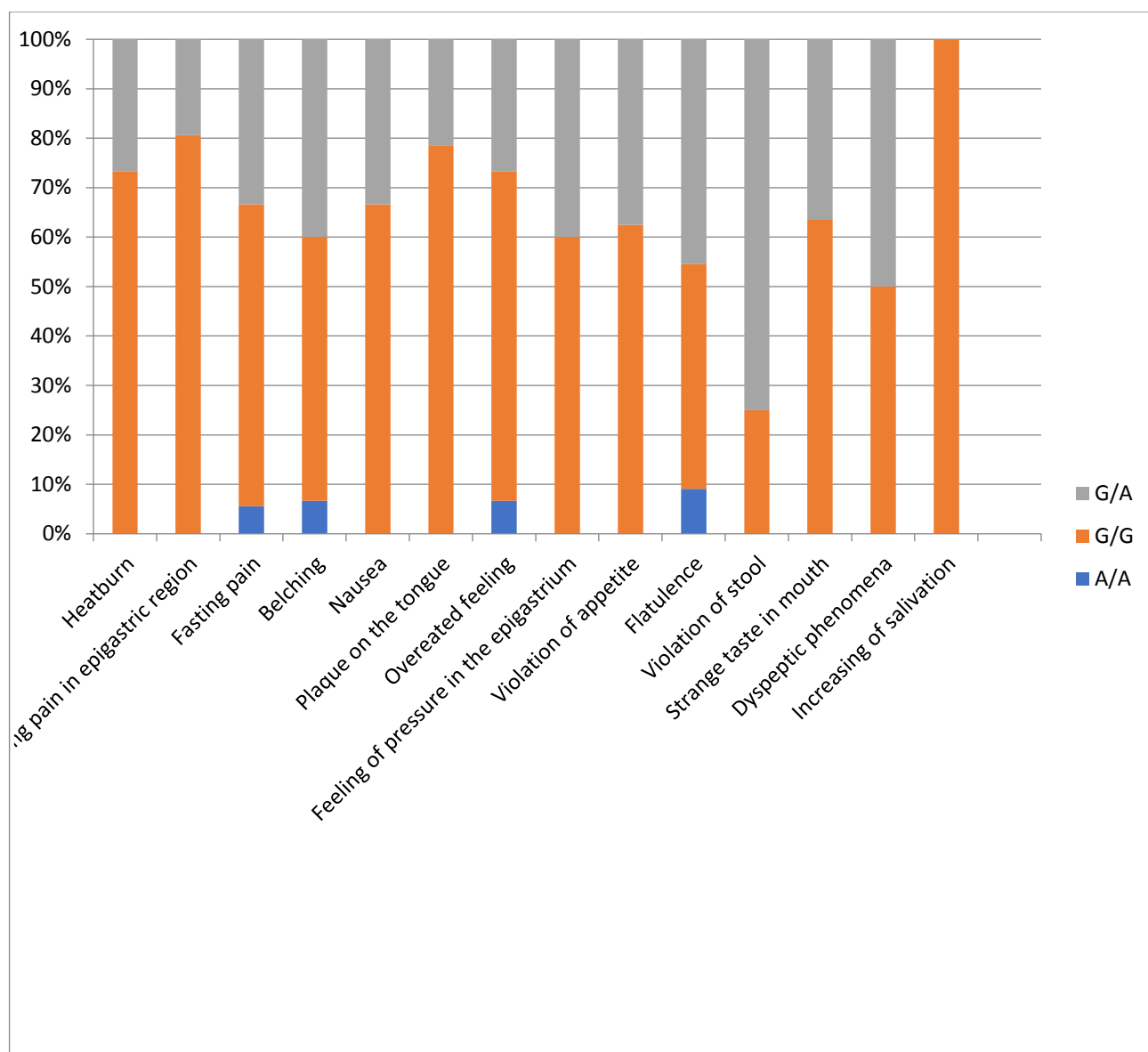


Figure 1. Characteristics of the clinical manifestations of peptic ulcer disease and its relationship with the genotypes of the SUR2C19 gene for the allelic variant G681A.

An interesting fact was the frequency of occurrence of concomitant diseases depending on the genotype of the gene CYP2C19 for the allelic variant G 681 A (Fig. 2). In patients with genotype A/A, the frequency of occurrence of

opportunistic diseases was low, and in isolated cases of chronic gastritis were associated with chronic cholecystitis and chronic gastritis, anemia, hepatitis, etc.

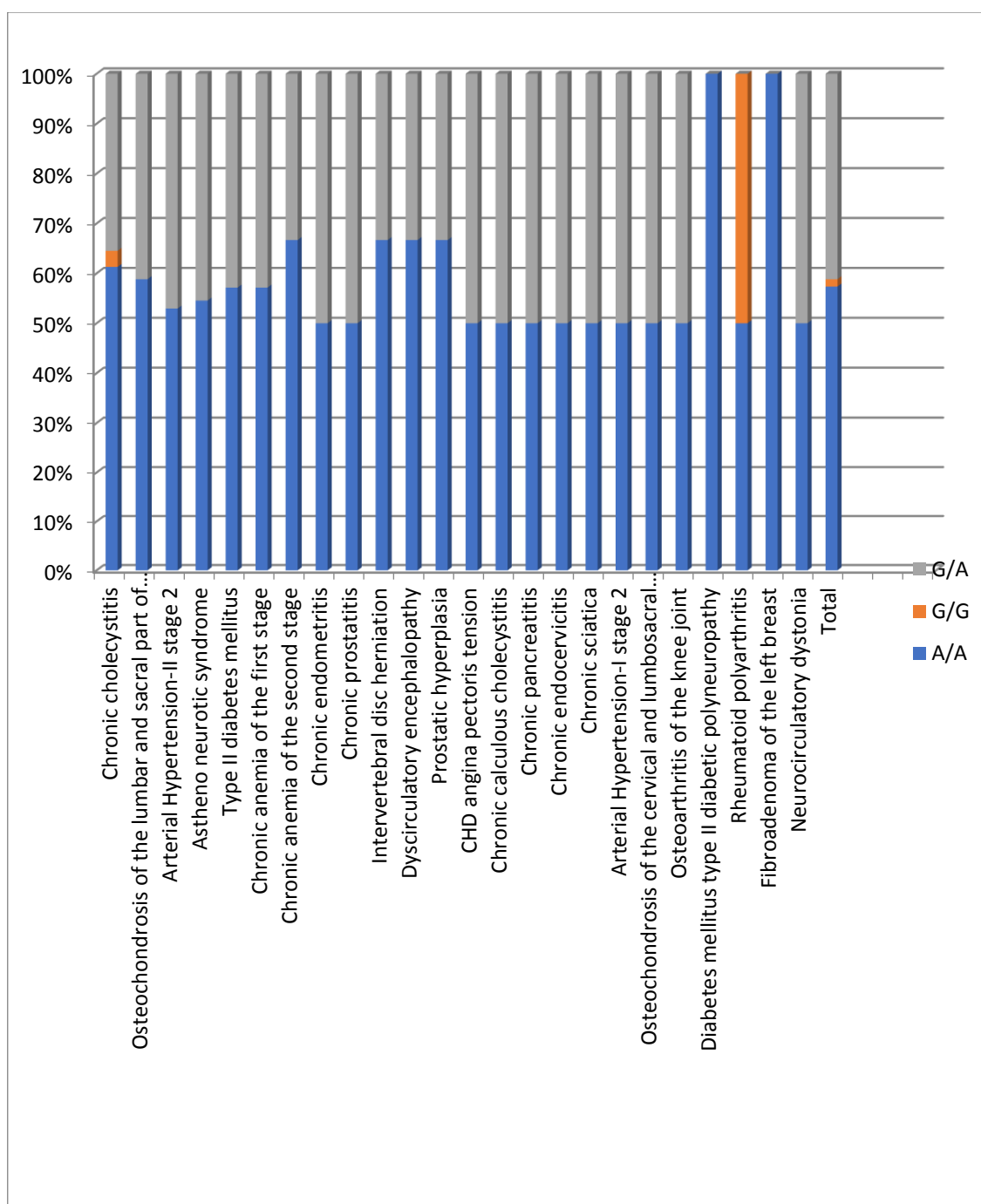


Figure 2. The frequency of concomitant diseases with peptic ulcer diseases, depending on the genotypes of the gene CYP2C19 for the allelic variant G681A

Conclusions

The main concomitant diseases of Peptic ulcer disease in patients with the G/G genotype were chronic cholecystitis (about 22% of cases), hypertension (12%), spinal osteochondrosis (12.5%), asthenoneurotic syndrome (about 9% of cases), diabetes mellitus (7%) and anemia (8%), and other diseases occurred in isolated cases. In patients with genotype G/A, the most common diseases were about 34% of cases of chronic gastritis and about 15% of cases of chronic cholecystitis, other diseases were registered in isolated cases.

It should be noted that in patients with chronic gastritis living in the Bukhara region in all genotypic groups, the main symptoms of chronic gastritis were fasting pain, heartburn, belching, feeling of overeating and flatulence. Also, in all genotypic manifestations of the SUR2C19 gene, the main concomitant diseases were chronic cholecystitis, hypertension, anemia, and diabetes mellitus.

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**APPLICATION OF BROCCOLI TO IMPROVE THE PERIOD OF REHABILITATION
AFTER POSSIBLE COVID-19 IN THE ELDERLY**

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✓ **Resume**

We tried to reveal the problem of rehabilitation of the elderly after suffering COVID-19 using broccoli juice, since a plant from the cabbage family - broccoli - is rich in vitamins and microelements that allow the body to recover after an illness.

Keywords: Broccoli, broccoli juice, COVID-19, rehabilitation.

**ПРИМЕНЕНИЕ БРОККОЛИ ДЛЯ УЛУЧШЕНИЯ РЕАБИЛИТАЦИИ ПОСЛЕ COVID-19
У ПОЖИЛЫХ ЛЮДЕЙ**

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Бухарский государственный медицинский институт

✓ **Резюме**

Мы постарались раскрыть проблему реабилитации пожилых людей после перенесённого COVID-19 с помощью использования сока брокколи, так как растение из семейства капустных – брокколи – богато витаминами и микроэлементами, которые позволяют восстановить организм после перенесённой болезни.

Ключевые слова: Брокколи, сок брокколи, COVID-19, реабилитация.

KEKSALARDA COVID-19 DAN KEYIN TIKLANISH DAVRIDA BROKOLINI QO'LLASH

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✓ **Rezyume**

Brokkoli sharbatida COVID-19 bilan og'rigan keksalarni reabilitatsiya qilish muammosini ochib berishga harakat qildik, chunki karam oilasidan olingan o'simlik - brokkoli - kasallikdan so'ng tanani tiklashga imkon beradigan vitaminlar va iz elementlariga boy.

Kalit so'zlar: Brokkoli, brokkoli sharbat, COVID-19, reabilitatsiya.

Relevance

People who have had coronavirus do not leave hospitals completely healthy; there have been cases when young, previously healthy people recovered from COVID-19 for four weeks. After the illness, all patients have asthenia, weakness, and headache, shortness of breath, increased sweating and depressed mood. Rehabilitation after coronavirus is necessary for everyone who has recovered, regardless of the severity of the disease. Elderly patients, especially those who have suffered moderate and severe forms of coronavirus pneumonia, require compulsory comprehensive rehabilitation [1, 2, 3, 4, 46, 49].

Coronavirus infection COVID-19 does not go away without consequences and a feeling of mild malaise can persist for many weeks or even months [30, 31, 32, 42].

Medicine has not yet studied all the long-term consequences of the coronavirus infection COVID-

19[28]. Doctors name several of the most common consequences that require high-quality rehabilitation:

- insomnia or excessive sleepiness
- constant weakness, fatigue
- decreased performance
- memory impairment, cognitive impairment
- violation of A / D (hypertension or hypotension)
- arrhythmia, tachycardia, bradycardia
- shortness of breath
- impaired respiratory function
- dyspepsia, deterioration of the gastrointestinal tract
- depression [28, 39, 45, 47].

Treatment procedures for recovery from coronavirus infection should begin immediately after the end of the 14-day quarantine. When the patient is able to leave the house again and

communicate with others, it is necessary to begin rehabilitation [7, 8, 9, 32, 48].

Recovery procedures should help a person to a normal life. Rehabilitation pursues a number of important goals:

- restore full lung function and respiratory function
- prevent pneumofibrosis
- prevent residual effects
- strengthen the immune system
- increase the vital capacity of the lungs
- eliminate chronic fatigue syndrome
- restore healthy sleep patterns
- relieve depressed mental state and depression
- to increase endurance and performance [28, 34, 42, 49]

Broccoli differs from other types of increased nutrient content, especially specific taste and higher biological activity. Experimental data indicate a high protein content, which includes antisclerotic substances choline and methionine, as well as such essential amino acids as lysine, methionine, valine, isoleucine, leucine, threonine, phenylalanine; nonessential - tyrosine, histidine, alanine, arginine, aspartic acid, glycine, glutamic acid, proline, serine. In terms of protein, broccoli surpasses sweet potatoes, potatoes, corn, sugar, asparagus, spinach. The protein of broccoli is low in purine substances - almost 4 times less than that of cauliflower, which gives it an advantage over the latter. In terms of the content of most essential amino acids in protein, broccoli is not inferior to beef, and in the presence of isoleucine, lysine and tryptophan, it is not inferior to chicken egg white [18, 24, 41].

Among the mineral salts, macro- and microelements in the composition of broccoli cabbage, potassium should be noted, which removes excess salts and water from the body; calcium and phosphorus, which ensure the functioning of bone and marrow tissues; iron, copper, cobalt, which take part in hematopoiesis; iodine, which prevents thyroid disease. This plant also contains a large amount of macronutrients (sodium, potassium, calcium, magnesium, phosphorus) and trace elements (iron, aluminum, manganese, copper, molybdenum, nickel, zinc, silicon) [5].

In terms of vitamin C, broccoli is inferior only to lemon, although much sweeter than the latter. In addition, in cabbage, vitamin C is contained not in

the form of ascorbic acid, but in the form of its precursor - ascorbigen, which is not destroyed during storage. B vitamins have a beneficial effect on the nervous system [23, 24].

Of particular note is the Indole-3-Carbinol contained in broccoli, which increases the efficiency of detoxification systems, which makes it possible to use it as an anti-aging agent [5]

According to recent studies, sulforaphane formed from glucoraphanin helps restore the body's immune functions, activates several antioxidant genes and enzymes in immune cells that fight the harmful effects of molecules - free radicals that cause oxidative damage to cells and tissues of the inflammation process and, therefore, lead to various diseases [5, 23].

In addition to general recommendations for improving rehabilitation, our goal was to study the effect of fresh broccoli juice on the general condition of patients and indicators in the analyzes.

Material and method

In order to improve the rehabilitation period for the elderly who have undergone COVID-19, especially those who have suffered moderate and severe forms of coronavirus pneumonia, they need mandatory comprehensive rehabilitation. For this purpose, in addition to the general recommendations described above, it was proposed to use freshly squeezed broccoli juice, 100 ml 1 time per day in the morning for 15 days. The study involved 44 patients over the age of 55 who had undergone COVID-19, regardless of the severity of the disease. 30 of them took freshly squeezed broccoli juice in the morning with breakfast, the remaining 14 patients took a regular breakfast without broccoli juice. All patients were on an outpatient basis at the city polyclinic №3 of the city of Bukhara.

Result and discussion

During the study, it was noted that in patients who took freshly squeezed broccoli juice as an improvement in the rehabilitation period during the study period, the general condition of the patients improved significantly, good mood and vigor returned, sleep improved, the feeling of fear disappeared, and general indicators in the analyzes also improved (ESR indicators and leukocytes returned to normal).

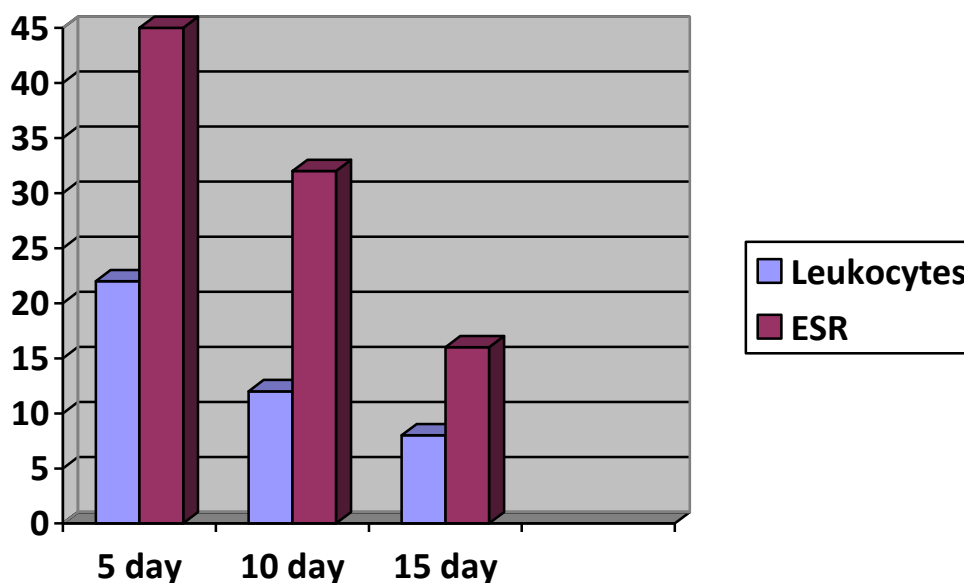


Figure 1. Change in ESR and leukocyte counts after the postponed course of COVID-19

We believe that the consumption of freshly broccoli juice in the elderly who have undergone COVID-19 can help strengthen the immune system and quickly complete the rehabilitation period for patients, in contrast to those who did not take it.

Conclusions

From the above, it is clear that as a result of the consumption of cabbage family vegetables, in particular broccoli, the body is enriched with the necessary amount of vitamins and amino acids, and the risk of colds is reduced. In addition, broccoli has antioxidant properties, which allows you to remove free radical compounds from the body. Since broccoli contains a large amount of vitamin C, it helps to protect the body against certain viral diseases. So, freshly squeezed broccoli juice is an affordable product that can be quickly included in the diet during the rehabilitation period in the elderly who have undergone COVID-19.

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