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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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TRAUMATIC BRAIN INJURY AND ITS IMPLICATIONS FOR BEHAVIORAL HEALTH FACTORS

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Abstract.

Introduction: The constant increase in the level of traumatic brain injuries in recent years, the frequent cases of disability and mortality associated with them require in-depth comprehensive research to study the problem on the ground, its medical, social, and economic aspects, which is very important for improving organizational measures to reduce traumatization among all age groups of the population.

Objectives: To determine the presence and nature of structural damage associated with traumatic brain injury. The presence and nature of structural damage associated with traumatic brain injury.

Material and methods: The studies included data on the treatment of victims with traumatic brain injuries from 2016 to 2020. on the basis of the Surgical Clinic of the Azerbaijan Medical University. Among the victims, men accounted for 77.9%, and women 22.1%. In a prospective comparative study, after signing informed consent, 299 people of different sexes were included, of which 90 were victims with isolated TBI. The inclusion criteria for the study were as follows: victims with a verified diagnosis of TBI; age over 18; patients without concomitant somatic pathology.

Results: In a gender-comparative analysis of the revealed data, an injury combined with fractures of the bones of the extremities was recorded in 77 (81.1%) males and 18 of their female opponents, who also received TBI and accounted for 18.9%. Also high, especially in the male half of the examined injured persons, was the frequency of occurrence of TBI combinations with rib fractures and injuries of the chest organs, such injuries were registered in 41 victims, which accounted for 77.4% of all the above combined TBI. Somewhat less in both sex groups was TBI in combination with traumatic injuries of organs and tissues of the abdominal region, as well as with mixed injuries ($\chi 2$ criterion is 2.066; Df=4; p=0.724).

Conclusions: The lowest level of TBI was observed in people under the age of 20 and older than 70 years, in other groups this figure increased sharply, reaching a maximum at the age of 20-29 and 40-49 years, and stabilized in the age groups over 49 years. The maximum number of cases associated with partial or complete loss of consciousness was recorded in persons aggravated by simultaneous traumatization of the upper or lower extremities and chest, as well as in isolated TBI.

Key words. Traumatic brain injury (TBI), concomitant injuries, age-sex characteristics, radiological diagnosis, cognitive impairment, correlation.

Introduction.

Taking into account the high costs of primary treatment, rehabilitation, and subsequent necessary social benefits for victims with severe forms of traumatic brain injury, we can talk about the relevance of this problem for any social system in general, and for healthcare authorities in particular. A comparative analysis of the data of some epidemiological studies revealed certain differences in the indicators recorded when certain etiological causes of TBI were identified; as a result, it was found that in some developing countries the largest proportion of TBI belongs to domestic violence [1-3], the frequency of which accounted for more than 70%, while in economically and socially developed countries the leading place belonged to road traffic accidents leading to TBI [4,5].

In addition, a comprehensive retrospective analysis conducted by scientists recorded a decrease in TBI in younger age groups and, conversely, an increase in the number of elderly patients with traumatic brain injury, that is, the maximum rates for TBI cases, as well as the mortality observed as a result of traumatization, were determined in the oldest age groups. [6-8]. In some scientific papers, clinical and epidemiological studies recorded pronounced differences also by gender in TBI, as evidenced by the data obtained and their statistical analysis, according to which of all the victims with TBI, males accounted for almost 77%, and only 25-26 % females [9,10].

Summing up the results of a brief review of the data and their comparative analysis, we can state the fact of an excellent epidemiological picture in various countries, as elderly victims predominate on the European continent and falls from a height are the main cause of TBI [11-14], and the second place is occupied by road traffic injuries. accidents that are more likely to involve motorcyclists [15], pedestrians [16-18] and a relatively smaller proportion of owners and passengers of motor vehicles [19-21].

Thus, the constant increase in recent years in the level of craniocerebral injuries, the frequent cases of disability and mortality associated with them require deep comprehensive research to study the problem on the ground, its medical, social, and economic aspects, which is very important for improving organizational measures to organization and application of optimal medical, in particular, trauma care.

Aims. To determine the presence and nature of structural damage associated with traumatic brain injury.

Materials and Methods.

To achieve this goal, a prospective comparative study of patients was carried out and a complex use of clinical, biochemical, and instrumental research methods was carried out to develop a clinical diagnostic algorithm and its application in various forms of isolated and combined injuries in patients with traumatic brain injuries. Scientific work was carried out on the basis of the Surgical Clinic of the Azerbaijan Medical University.

The studies included data on the treatment of 299 people from 2016 to 2020. Among the victims, men predominated (77.9%) of different, in a significant part of people of working age. Young

patients also predominated among 22.1% of injured women. In a prospective comparative study, after signing informed consent, people of different sexes were included, of which 90 victims had isolated TBI.

The inclusion criteria for the study were as follows: victims with a verified diagnosis of TBI; age over 18; patients without concomitant somatic pathology; patients with laboratory and instrumental parameters without pronounced deviations and reflecting the general state of the body in the norm. The exclusion criteria were patients with severe somatic pathology, in particular, with hepatic, renal and severe cardiovascular insufficiency; age up to 18 years. CT, in comparison with traditional ultrasound and radiography, in the study of structural changes in the brain area has a higher resolution, which made it possible to introduce a comparative analysis of the frequency of use and effectiveness of these methods of radiation diagnostics into the objectives of this study. without exception, all patients, except for the conducted clinical, laboratory and instrumental studies, were examined by doctors of other related specialties, including a therapist, psychiatrist, ophthalmologist, otolaryngologist, and, in the presence of combined traumatic injuries, by a urologist, pulmonologist, etc.

The studies were carried out with the written consent of the patients in compliance with the norms of biomedical ethics set forth in the Declaration of Helsinki "Ethical Principles of Medical Research Involving Humans", developed by the World Medical Association, "Universal Declaration on Bioethics and Human Rights (UNESCO)" [22].

The obtained data were statistically processed using the Microsoft Excel and Statistica 7.0 software package. The indicators are presented as their mean values and mean error (M ± m). Statistical significance of differences between samples was determined using the Student's t-test and using non-parametric Kruskal-Wallis Test (ANOVA) and Mann-Whitney methods. Differences in the compared indicators were considered significant at $p < 0.05$.

Results.

The table below shows that the vast majority of patients with combined traumatic injuries of the bones of the skull and other organs are at a relatively young age, including the age group of 20-29 years, where the frequency of occurrence of traumatic brain injuries associated with the area of the upper and lower extremities was the maximum value and was recorded at a value of 34.7%.

In the same age group, the highest prevalence rates of isolated head and brain injuries were 35.6%. As for injuries of the chest and abdominal region combined with TBI, here the indicators of their intensity in high values were recorded in the group of patients whose age was 40-49 years. So, 28.3% and 29.2% were cases of detection in this age group of injured persons, aggravated by the above combined forms of traumatization. The minimum indicators were recorded for the level of all studied types of trauma in the oldest age group, that is, at the age of 70 years and older. That is, over the entire period of our observations, the share of elderly and senile patients in the structure of traumatic brain injury decreases ($\chi 2$ criterion is 32.135; Df=24; p=0.124).

Thus, there is a fact of an increase in traumatism in middle age, that is, people of the most able-bodied age are subject to craniocerebral injuries, which requires special attention from specialists, since it is very important for everyone due to the loss of working capacity of the most physically active part of the population. society social and economic importance.

In a gender-comparative analysis of the revealed data, an injury combined with fractures of the bones of the extremities was recorded in 77 (81.1%) males and 18 of their female opponents, who also received TBI and accounted for 18.9%.

Table 1. *Distribution of patients based on age and gender.*

		Qroup									
		TBI		**TBI + extremity fracture**		**TBI + chest trauma**		**TBI + abdominal injuries**		**TBI + concomitant injuries**	
		Count	**Column N %**	**Count**	**Column N %**	**Count**	**Column N %**	**Count**	**Column N %**	**Count**	**Column N %**
Gender	Male	66	73,3%	77	81,1%	41	77,4%	20	83,3%	29	78,4%
	Female	24	26,7%	18	18,9%	12	22,6%	4	16,7%	8	21,6%
Age	< 20	11	12,2%	7	7,4%	4	7,5%	0	0,0%	4	10,8%
	20-29	32	35,6%	33	34,7%	9	17,0%	3	12,5%	6	16,2%
	30-39	10	11,1%	18	18,9%	12	22,6%	3	12,5%	7	18,9%
	40-49	15	16,7%	18	18,9%	15	28,3%	7	29,2%	8	21,6%
	50-59	15	16,7%	11	11,6%	7	13,2%	6	25,0%	6	16,2%
	60-69	5	5,6%	3	3,2%	5	9,4%	4	16,7%	3	8,1%
	>=70	2	2,2%	5	5,3%	1	1,9%	1	4,2%	3	8,1%

Pearson Chi-Square Tests		
		qrup
Gender	Chi-square	2,066
	df	4
	Sig.	0,724
Age	Chi-square	32,135
	df	24
	Sig.	0,124

Table 2. *An evaluation of imaging in traumatic brain injury (TBI).*

Range of imaging procedures		qrup									
		TBI		TBI + extremity fracture		TBI + chest trauma		TBI + abdominal injuries		TBI + concomitant injuries	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
X-ray	did not have	0	0,0%	1	1,1%	1	1,9%	0	0,0%	0	0,0%
	had	90	100,0%	94	98,9%	52	98,1%	24	100,0%	37	100,0%
US	did not have	0	0,0%	0	0,0%	0	0,0%	0	0,0%	0	0,0%
	had	90	100,0%	95	100,0%	53	100,0%	24	100,0%	37	100,0%
CT	did not have	0	0,0%	3	3,2%	1	1,9%	0	0,0%	0	0,0%
	had	90	100,0%	92	96,8%	52	98,1%	24	100,0%	37	100,0%

Pearson Chi-Square Tests		
		qrup
X-ray	Chi-square	-
	df	4
	Sig.	,661
US	Chi-square	-
	df	-
	Sig.	-
CT	Chi-square	6,488
	df	4
	Sig.	,336

Table 3. *Loss of Consciousness (LOC) according to severity of injury.*

State of consciousness		Groups									
		TBI		TBI + extremity fracture		TBI + chest trauma		TBI + abdominal injuries		TBI + concomitant injuries	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Valid	Without LOC	5	5,6%	3	3,2%	5	9,4%	3	12,5%	6	16,2%
	With LOC	85	94,4%	92	96,8%	48	90,6%	21	87,5%	31	83,8%

Pearson Chi-Square Tests		
		qrup
Сознание	Chi-square	27,335
	df	4
	Sig.	,078

Table 4. *Differences between outcome groups assessed using the Kruskal-Wallis rank test for various parameters.*

Test Statistics[a,b]	Gender	Age	LOC	X-ray	US	CT
Chi-Square	,519	11,874	7,081	1,077	,000	1,964
df	3	3	3	3	3	3
Asymp. Sig.	,915	,008	,069	,783	1,000	,580

a. Kruskal Wallis Test.
b. Grouping Variable: qrup.

Also high, especially in the male half of the examined injured persons, was the frequency of occurrence of TBI combinations with rib fractures and injuries of the chest organs, such injuries were registered in 41 victims, which accounted for 77.4% of all the above combined TBI.

Somewhat less in both sex groups was TBI in combination with traumatic injuries of organs and tissues of the abdominal region, as well as with mixed injuries ($\chi 2$ criterion is 2.066; Df=4; p=0.724). When carrying out complex diagnostic measures, some highly informative radiation diagnostic methods were used, as a result of which, it was revealed that computed tomography makes it possible to determine, if any, damage to internal organs and body systems, to assess their severity, which in turn makes it possible to plan and the use of the necessary amount of conservative and surgical treatment, which is also reflected in numerous works of foreign authors who consider CT to be indispensable in monitoring and managing patients with both isolated and combined traumatic brain injury. In the course of these studies, this method of radiodiagnosis no later than the first two to three hours from the moment of transportation of patients from the scene was used to study the degree of traumatization of the head and brain in 90 (100%)

victims with isolated and in 52 (98.1%) cases with traumatic injuries of the chest combined with craniocerebral injury ($\chi 2$ criterion is 1.964, Df=3, significance level p=0.580).

It should be noted that CT made it possible to accurately identify the localization, volume and nature of damage, primarily to bone tissue, in particular, to the bones of the skull, as well as to the substance of the brain, at the same time, the use of this method makes it possible to determine in dynamics the nature of further structural changes after intracranial pathological disorders of traumatic genesis.

An analysis of the statistically verified data of these studies and acquaintance with the works of foreign scientists gives reason to assert that in recent years there have been quantitative and qualitative structural changes in craniocerebral trauma, characterized by an increase in the number of persons burdened with more severe and dangerous injuries. According to accepted recommendations, traumatic brain injury is an acute impairment of the functional activity of the brain due to traumatic head injury, accompanied by a decrease in the level of wakefulness. But with a relatively milder isolated form of injury, and in rare cases, there may be a short-term loss of consciousness. At the same time, the data obtained testified to the diagnosis in the examined patients of more frequent cases of severe forms of mechanical damage, which is confirmed by the registered statistical data, according to which the percentage of cases of detection of persons with a pathological condition accompanied by episodes of unexpected loss of consciousness amounted to a total of 92.6%, and a clear consciousness was noted only in 7.4% of the victims.

The results of assessing the frequency and degree of impairment of consciousness in the patients examined by us upon admission to the hospital revealed some distinctive features associated with the combination of TBI with injuries of various organs and systems of the body.

Thus, the maximum number of cases associated with partial or complete loss of consciousness was recorded in persons aggravated by simultaneous traumatization of the upper or lower extremities and chest, as well as in isolated TBI - 96.8%, 90.6% and 94.4%, respectively. Less commonly, the studied pathological condition was observed in trauma of the abdomen combined with TBI and a mixed type of traumatization ($\chi 2$ criterion is 8.413, Df=4, significance level p=0.078).

The Kruskal-Wallis one-way ANOVA test showed no significant differences across the traumatic brain injury (TBI) sub-groups in the quantified imaging metrics. Imaging of TBI using X-ray or US results in no specific imaging correlation that would explain some important symptoms. No differences in CT were found based on severity of injury or refers to any type of damage.

Discussion.

Combined craniocerebral injuries or the so-called polytrauma, according to our data, occupies one of the first places among peacetime injuries and is the most characteristic category for real road traffic injuries with atypical clinical course and extracranial injuries, which is confirmed by studies of foreign authors who revealed the fact that this form of injury reaches 70–92% of the total number of all injuries in terms of prevalence and severity [23,24]. The greatest deviations in the prevalence of traumatic brain injury are detected in the youngest and oldest age groups, that is, up to 20 years of age and in groups that included victims over the age of 70 years and where the lowest level of TBI was noted, in subsequent age groups this indicator increased sharply, reaching a maximum at the age of 20-29 years and 40-49 years, and stabilized in the age groups over 49 years.

When studying the characteristic features of traumatic brain injury, changes in the mechanisms and causes of such traumatic injuries, the prevalence of males in this matter was revealed. In the course of these studies, when performing CT scans with combined TBI + chest trauma, pathology was detected only in 98.1% of cases, in contrast to patients with isolated TBI, in whom pathological changes were noted in 100% of cases, which may indicate the presence in clinical practice certain difficulties in the optimal diagnosis and objectification of various forms of the studied traumatic injuries. According to the results of the assessment of the patient's cognitive state, the frequency of depression of consciousness was established, which was not detected only in 7.4% of the total number of all examined victims without exception.

Conclusion.

The lowest level of TBI was observed in people under the age of 20 and older than 70 years, in other groups this figure increased sharply, reaching a maximum at the age of 20-29 and 40-49 years, and stabilized in the age groups over 49 years. The maximum number of cases associated with partial or complete loss of consciousness was recorded in persons aggravated by simultaneous traumatization of the upper or lower extremities and chest, as well as in isolated TBI.

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Черепно-мозговая травма и ее последствия для поведенческих факторов здоровья

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Резюме.

Введение: Постоянный рост в последние годы уровня черепно-мозговых травм, связанные с ними частые случаи инвалидизациии и летальности требуют проведения глубоких всесторонних исследований с целью изучения проблемы на местах, ее медико-социальных и экономических аспектов, что очень важно для совершенствования организационных мер по снижению травматизации среди всех возрастных групп населения.

Цель: Установить наличие и характер структурных повреждений, ассоциированных с черепно-мозговой травмой.

Материал и методы: В исследования были включены данные о лечении пострадавших с черепно-мозговыми травмами с 2016 по 2020 гг. на базе Хирургической Клиники Азербайджанского Медицинского Университета. Среди пострадавших мужчины составили 77,9%, а женщины 22,1%. В проспективное сравнительное исследование после подписания информированного согласия были включены 299 человек разного пола, из которых 90 пострадавших с изолированной ЧМТ. Критерии включения в исследование были следующие - пострадавшие с верифицированным диагнозом ЧМТ; возраст старше 18 лет; пациенты без сопутствующей соматической патологии.

Результаты: При сравнительном по половому признаку анализе выявленных данных, сочетанная с переломами костей конечностей травма была зафиксирована у 77 (81,1%) лиц мужского и 18 их оппонентов женщин, также получивших ЧМТ и составивших 18,9%. Также высоким, особенно у мужской полвины обследуемых травмированных лиц, оказался уровень частоты встречаемости сочетаний ЧМТ с переломами ребер и повреждениями органов грудной клетки, подобные травмы зарегистрированы у 41-го пострадавшего, что составило 77,4% всей вышеуказанной сочетанной ЧМТ. Несколько меньше в обеих половых группах было ЧМТ в сочетании с травматическими повреждениями органов и тканей брюшной области, а также со смешанными травмами (критерий $\chi 2$ составляет 2,066; Df=4; p=0,724).

Выводы: Наименьший уровень ЧМТ отмечались у лиц в возрасте до 20-ти лет и старше 70 лет, в других группах этот показатель резко повышался, достигая максимума в возрасте 20-29 лет и 40-49 лет, и стабилизировался в возрастных группах старше 49 лет. Максимальное число случаев, связанных с частичной или полной потерей сознания, были зафиксированы у лиц, отягощенных одновременной травматизацией верхних или нижних конечностей и грудной клетки, а также при изолированной ЧМТ.

Ключевые слова: черепно-мозговая травма (ЧМТ), сочетанные травмы, возрастно-половой признак, лучевая диагностика, когнитивные нарушения, корреляция