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QUALITY OF LIFE AND PAIN MANAGEMENT IN PATIENTS AFTER GUNSHOT WOUNDS

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Summary

Introduction. In 1948, the World Health Organization defined health as not only the absence of disease but also the presence of physical, psychological and social well-being. Quality of life is a somewhat new concept borrowed from sociology, where it is understood as the ability of an individual to function in society in accordance with his or her position and to enjoy it. A number of researchers have studied the quality of life of patients after injuries, but there are very few results in Ukraine. Given the increasing number of patients with gunshot wounds, our study aims to highlight this issue, as it will be of national importance in the long term.

The aim is to study the level of quality of life in patients after gunshot wounds.

Materials and methods. The treatment of 769 patients was analyzed. The level of quality of life was studied using the Chaban quality of life scale (CQLS). The groups were compared by the Mann-Whitney test and the chi-square test.

Results. The CQLS diagnosis indicates that at the time of discharge from inpatient treatment, the quality of life was at a high level (76 points), but then, 1 month after discharge, it decreased to a low level (64 points) and did not change in the following months – 3, 6 and 12 months.

Conclusions. The results of the study indicate that more attention should be paid to the problem of quality of life in patients after gunshot wounds and that we should strive to study this issue and identify new ways to improve the situation. In our opinion, one of the factors that affect the quality of life is the formation of chronic pain, which requires further study.

Key words: quality of life, pain management, gunshot wounds, chronic pain, pain

INTRODUCTION

The concept of quality of life is considered to be, to some extent, a new concept borrowed from sociology, where it is understood as the ability of an individual to function in society in accordance with his or her position and to enjoy it [2-4]. In 1948, the World Health Organization defined health not only as the absence of disease but also as the presence of physical, psychological and social well-being [5, 11, 18]. After that, medical practice began to pay more and more attention to the quality of life. Here, the patient is considered not only as a subject of treatment, but also as a person who changes under the influence of the disease and returns to society in a different status [6-10]. The first printed work containing the term «quality of life» was published in 1947 and concerned aspects of cancer treatment [12, 15-17]. In the study of chemotherapeutic methods of treating malignant

tumors, attention was drawn to a person suffering from a severe chronic disease. Since then, the interest to the problem of quality of life in medicine has been growing steadily [13, 14].

It is already believed that quality of life is a characteristic of physical, psychological, emotional and social functioning based on subjective perception [19, 24]. Involuntarily, a parallel emerges with the general definition of pain, which was updated in 2020 by the International Association for the Study of Pain (IASP) for the first time since 1979: pain is an unpleasant sensory and emotional experience associated with or seemingly associated with actual or potential tissue damage [20-23].

The interdependence of treatment quality and quality of life is quite complex. It is logical to assume that the more effective the treatment, the higher the quality of life. However, this pattern is not always observed.

Studying the quality of life in patients after gunshot wounds, after treatment in the long term, requires in-depth research, because this problem is already growing and, in the future, will be of national importance.

The aim is to study the level of quality of life in patients after gunshot wounds.

MATERIALS AND METHODS

Our study was conducted at the National Military Medical Clinical Center «Main Military Clinical Hospital». Patients were selected after gunshot wounds sustained during the war. The level of quality of life was studied using the Chaban quality of life scale (CQLS) [1]. Scoring criteria: up to 56 inclusive – very low level, 57-66 – low, 67-75 – medium, 76-82 – high, 83-100 – very high. The level of quality of life was monitored for 1 year: at the time of discharge from inpatient treatment, 1, 3, 6 and 12 months after discharge from inpatient treatment.

The study was performed within the framework of the biotic review protocol approved by the Commission on May 23, 2022 at the Bogomolets National Medical University, Ukraine. All study data were recorded in the patient’s medical record. They are stored in the archives of the National Military Medical Clinical Center «Main Military Clinical Hospital», 18 Hospitalna Street, Kyiv, Ukraine.

To analyze the results, we used the EZR v.1.35 package. The Shapiro-Wilk test was used. Quantitative indicators were presented: the median value (Me) and interquartile range (QI-QIII) were given. The Mann-Whitney test was used to compare the indicators. The Friedman criterion was used to analyze the dynamics of

the indicator. The chi-square test was used to compare the two groups.

STUDY RESULTS AND DISCUSSION

We divided the selected 769 patients after gunshot wounds into two groups, depending on the number of injured anatomical parts of the body [10]. Thus, group 1 included 630 patients, and group 2 included 139 patients. The patients’ age ranged from 25 to 39 years, height – 175-182 cm, weight – 74-85 kg. The number of surgical operations performed ranged from 4 to 7. The groups did not differ in these indicators ($p=0.762$), the Mann-Whitney test was used for comparison.

All patients underwent various types of anesthetic support during surgery: 1) in group 1 – general anesthesia – 32.5%, regional anesthesia – 33.7%, regional anesthesia with sedation – 33.8%; 2) in group 2 – general anesthesia – 30.9%, regional anesthesia – 32.4%, regional anesthesia with sedation – 36.7%. The groups are also comparable ($p=0.810$) in terms of the types of anesthetic support.

Anesthesia risk was taken into account in accordance with the classification of the American Society of Anesthesiologists (ASA), so in group 1 with ASA 2 there were 4.6% of patients, ASA 3-80.2% of patients, ASA 4-15.2% of patients, in group 2 – ASA 2-2.2% of patients, ASA 3-81.3% of patients and ASA 4-16.5% of patients. The chi-square test was used for the comparison, taking into account the correction for continuity. There was also no statistically significant difference between patients ($p=0.411$).

Table 1

Level of quality of life of patients after gunshot wounds.

Indicator	Group 1 (n=630)	Group 2 (n=139)	P
Quality of life during discharge from inpatient treatment	73 (68-76)	73 (68-76)	0.913
Quality of life 1 month after discharge from inpatient treatment	64 (64-68)	64 (64-68)	0.805
Quality of life 3 months after discharge from inpatient treatment	64 (64-68)	64 (64-68)	0.845
Quality of life 6 months after discharge from inpatient treatment	64 (64-68)	64 (64-68)	0.851
Quality of life 12 months after discharge from inpatient treatment	64 (64-68)	64 (64-68)	0.752

Notes: The comparison was based on the Mann-Whitney test.

The Mann-Whitney test was used to compare groups 1 and 2. Table 1 shows that the level of quality of life at the time of discharge from inpatient treatment in groups 1 and 2 ranged from 68-76 points (mean value – 73 points) – $p=0.913$; after 1 month, this indicator in groups 1 and 2 ranged from 64 to 68 points (mean value – 64 points) – $p=0.845$; after 3 months – from 64 to 68 points (mean – 64 points) – $p=0.851$; after 12 months – from 64

to 68 points (mean – 64 points) – $p=0.752$, a statistically significant difference between the groups. However, analyzing the CQLS data in patients with gunshot wounds, it is clear that patients in two groups during the entire observation period had the highest level of quality of life before discharge from hospitalization and ranged from 68 – the average level of quality of life to 76 points – this corresponds to a high level of satisfaction. Later, after 1,

3, 6 and 12 months of follow-up, this indicator decreased and ranged from 64 to 68 points, which corresponds to an average level of quality of life. The level of quality of life according to the CQLS corresponded to the average level. This indicator depends on the patient's psychological status, sensations in the injured anatomical area of the body and emotional experiences associated with the events and circumstances in which the patient was injured.

CONCLUSIONS

The analysis of the results of pain treatment in 769 patients with gunshot wounds in combat showed a high risk of chronic pain. A decrease in the level of satisfaction with

the results of treatment in the long-term follow-up period compared to the level at the time of discharge from the hospital is likely to be a consequence of the formation of chronic pain.

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AUTHORS' CONTRIBUTION TO THE ARTICLE

Vasyl R. Horoshko – concept and design of the study; collection, processing of materials, analysis of data, writing the text, design of figures.

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Резюме

ЯКІСТЬ ЖИТТЯ ТА ЛІКУВАННЯ БОЛЮ У ПАЦІЄНТІВ ПІСЛЯ ВОГНЕПАЛЬНИХ ПОРАНЕНЬ

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Вступ. В 1948 році Всесвітня організація охорони здоров'я визначила здоров'я не лише як відсутність хвороби, але й як наявність фізичного, психологічного та соціального благополуччя. Якість життя є дещо новим поняттям, яке запозичене з соціології, де під ним розуміють здатність індивідуума функціонувати в суспільстві відповідно до свого положення і отримувати задоволення від цього. Ряд дослідників вивчають якість життя пацієнтів після поранень, проте, що стосується даних результатів в Україні, то їх дуже мало. Враховуючи збільшення кількості пацієнтів з вогнепальними пораненнями наше дослідження спрямоване на висвітлення даної проблематики, адже у віддаленій перспективі це буде мати державне значення.

Мета: дослідити рівень якості життя у пацієнтів після вогнепальних поранень.

Матеріали та методи. Проаналізовано лікування 769 пацієнтів. Рівень якості життя вивчали за допомогою шкали оцінки якості життя (Chaban quality of life scale (CQLS)). Порівняння груп проводилося за критерієм Манна-Уїтні та за критерієм хі-квадрат.

Результати. Діагностика за CQLS свідчить, що на момент виписки зі стаціонару якість життя була на високому рівні (76 балів), але потім, через 1 місяць після виписки, вона знизилася до низького рівня (64 бали) і не змінювалася в наступні місяці – 3, 6 і 12 місяців.

Висновки. Результати дослідження свідчать про те, що проблеми якості життя пацієнтів після вогнепальних поранень слід приділяти більше уваги та прагнути до вивчення цього питання та пошуку нових шляхів для покращення ситуації. На нашу думку, одним із факторів, що впливають на якість життя, є формування хронічного болю, що потребує подальшого вивчення.

Ключові слова: якість життя, лікування болю, вогнепальні поранення, хронічний біль, біль