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THE ROLE OF SOCIAL AND HYGIENIC FACTORS IN HOSPITALIZED PATIENTS IN THE DEVELOPMENT OF OSTEOCHONDROSIS OF THE SPINE

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Key words: osteochondrosis of the spine, prevalence, hospitalized morbidity, risk factors, socio-hygienic factors.

Introduction. Osteochondrosis is a complex degenerative disease of the musculoskeletal system that affects not only the intervertebral discs, but also other parts of the spine, as well as muscles and nerve endings. This disease is the result of many factors affecting the health of the musculoskeletal system. [1]. The great interest of doctors of various specialties in OS (osteochondrosis of the spine) is due to the extreme prevalence of the disease worldwide [2,3,11]. Screening X-ray examinations indicate that the initial signs of degenerative-dystrophic changes in the spine, manifested in a decrease in the height of the intervertebral discs, may already appear in children aged 6 years, which signals the occurrence of osteochondrosis. [4] Acute problems associated with this disease arise due to its widespread prevalence among people of working age (45-60 years), which leads to significant economic losses, including the cost of medical services and reduced labor productivity. [5,6,12] In people over 50 years of age, the pathology of the musculoskeletal system occupies a leading place in the structure of general morbidity. OS with spondylogenic pain syndrome is the second most common reason for going to a doctor after respiratory diseases and the third most common reason for hospitalization [7,8]. Thus, the prevalence of OS reaches the size of a pandemic and is a serious medical and socio-economic problem in developed countries [9, 10]. Nevertheless, early diagnosis, adequate treatment and rehabilitation play a key role in improving the quality of life of patients and in a positive medical and social prognosis for people with osteochondrosis of the spine.

Aim. To study age and gender characteristics, social status and occupation in hospitalized patients as risk factors for the development of spinal osteochondrosis.

Materials and methods. To study age and gender characteristics, social status and occupation as risk factors for the development of spinal osteochondrosis in hospitalized patients, 2511 case histories of patients of the department of vertebrology with a diagnosis of OS were studied in the archive of the Republican Specialized Scientific and Practical Medical Center of Traumatology and Orthopedics. The analysis of statistical data was carried out in the Statistica 10.0 application software package. Statistical data are presented in the form of arithmetic mean and standard deviation ($M \pm \sigma$) or percentage (%).When comparing qualitative features, the criterion $\chi 2$ was calculated. The differences were considered statistically significant at $p < 0.05$.

Results. In the period from 2020 to 2023, there has been a significant increase in hospitalizations to the Republican Specialized Scientific and Practical Medical Center for Traumatology and Orthopedics. During this period, the number of hospitalized patients increased 1.7 times. The increase in hospitalizations for spinal osteochondrosis in the vertebrology department showed a more pronounced trend, increasing 3.2 times during the period under review. The most likely reason for the observed increase in hospitalizations, including for osteochondrosis, is the post-pandemic period. In 2020, restrictions related to

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COVID-19 probably led to a decrease in the rate of hospitalization of patients with diseases of the musculoskeletal system, including osteochondrosis. Currently, after the lifting of restrictions, there is an inflammation of delayed visits to specialists, which leads to an increase in hospitalizations. Analysis of statistical data showed that the majority of hospitalized patients with osteochondrosis of the spine are people of working age, since their average age was 56.6±0.3 years and did not significantly change during the study period. The minimum age of hospitalized patients with osteochondrosis is 16 years, the maximum is 91 years.

The proportion of women in the study group of hospitalized osteochondrosis patients was 66.7%, men – 33.3%. When comparing the characteristics of patients depending on gender, it was found that the ages of men and women hospitalized for osteochondrosis differ, the average age of women was 5.8 years higher than that of men ($p<0.001$) (58.5±0.3 and 52.7±0.5 years, respectively). (1-tab)

A study of the sex and age structure of patients with osteochondrosis revealed significant differences in gender distribution depending on age groups. Before the age of 50, there is a statistically significant predominance of men ($p<0.01$), which may be due to the influence of professional factors that are more common in young men. After the age of 50, women significantly predominate ($p<0.001$). In the age group of 71 years and older, the number of women with osteochondrosis is almost twice as high as the number of men ($p<0.01$) (Table 1). The data confirm the influence of hormonal changes during menopause on the development of osteochondrosis in women.

Table 1

Age data of patients

Age groups	Men %	Women %	Total
<19	1,9±0,5*	0,4±0,15	0,9±0,6
20-29	5,5±0,8*	2,2±0,36	3,3±0,4
30-39	15,7±1,3	9,4±0,7	11,5±0,6
40-49	23,5±1,5	15,5±0,9	18,2±0,7
50-59	17±1,3	22,1±1*	20,4±0,8
60-69	23,9±1,5	29,5±1,1	27,6±0,9
70-79	9,7±1*	17,9±0,9	15,1±0,7
80 and older	2,9±0,5	3,1±0,4	3±0,3
Average age	52,7±0,5	58,5±0,3	54,9±0,6

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Min.	16	16	16
Max.	91	91	91

*Note: * the difference between women and men is significant, * - p<0.05, ** - p<0.01.*

The duration of treatment of patients with osteochondrosis in the department of vertebrology depends on the type of inpatient care received: conservative or operative. The average duration of conservative treatment was 6.95±0.05 days (6.81±0.1 days for men and 7.01±0.06 days for women). The average duration of surgical treatment was 3.78±0.04 days (3.6±0.08 days for men and 3.91±0.07 days for women). During the study period (2020-2023), there was a statistically significant decrease (p<0.001) in the average duration of hospital treatment by almost 1 day. (Fig.1)

It was found that the average duration of treatment in women lasts almost 1 day longer than in men (p<0.001). Correlation analysis of the data showed that the age dependence on the duration of treatment has a weak direct correlation between men (r=0.27) and women (r =0.29).

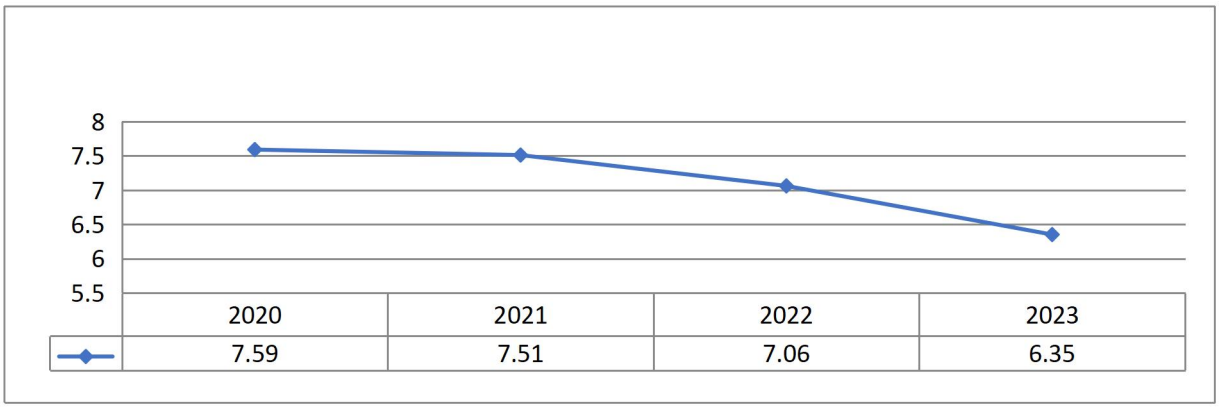

Figure 1. Dynamics of the duration of hospital treatment

The study of the place of residence of hospitalized patients with osteochondrosis showed the predominance of patients living in rural areas. The reasons may be differences in lifestyle: rural residents tend to lead a more active lifestyle, including physical work and increased physical activity. In addition, rural residents may have limited access to specialized medical care, which may lead to delayed access to doctors and more severe forms of the disease. This can lead to an increased risk of osteochondrosis. And the urban lifestyle is often characterized by limited physical activity, prolonged sitting at a computer or driving a vehicle. This can lead to a weakening of the back muscles and an increased risk of osteochondrosis. There was no statistically significant difference between men and women by place of residence (Fig. 2).

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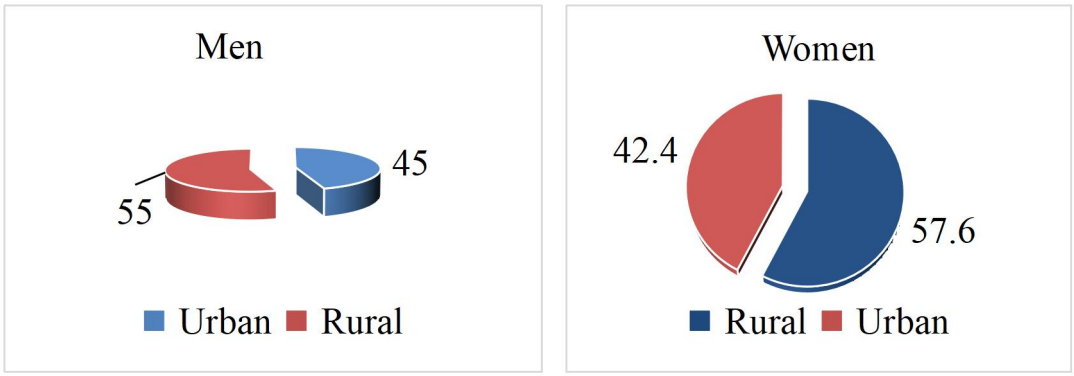

Figure 2. The structure of patients by place of residence (%).

The study of the ways of hospitalization of patients with osteochondrosis revealed significant differences in the proportion of self-treatment and referral by medical institutions between men and women. Independent treatment: 96.7±1.2% and 91.3±1.3% of women and men arrived for treatment without referral from a medical institution. While 3.3±1.2% of men and 8.9±1.3% of women were hospitalized at a medical facility, which is 2.7 times more than in men ($p<0.01$).

The number of unscheduled hospitalizations among patients is 4 times higher than planned ones, which was established during the analysis of the nature of their hospitalization. However, there were no statistically significant differences in indicators between men and women. Patients with osteochondrosis may delay seeing a doctor until the pain becomes unbearable, and in some cases osteochondrosis may be diagnosed untimely, which may also lead to unplanned hospitalization (Fig. 3).

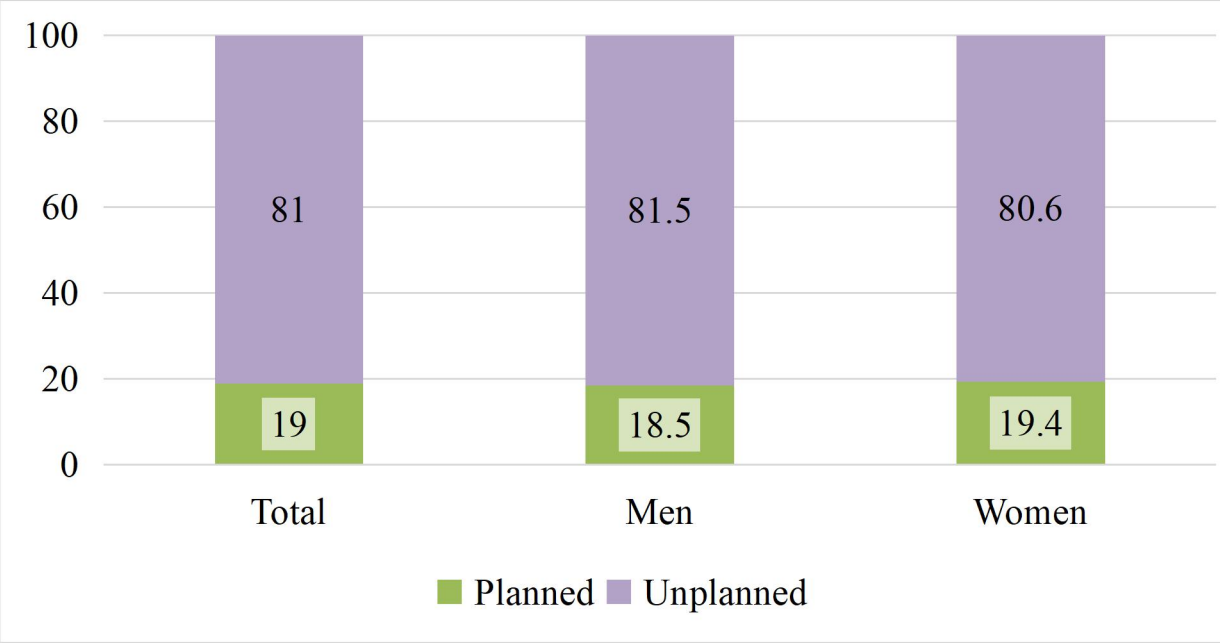

Figure 3. Inpatient treatment of patients (%).

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