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SOCIO-MEDICAL SIGNIFICANCE AND PREVENTIVE STRATEGIES OF SPINAL CORD CIRCULATORY DISORDERS

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Abstract: Spinal cord circulatory disorders represent one of the most severe and disabling pathologies of the central nervous system. These conditions drastically reduce the quality of life, often result in long-term disability, and impose a considerable economic burden on healthcare systems. The aim of this study was to investigate the socio-medical significance of spinal cord circulatory disorders, identify contributing risk factors, and substantiate a system of preventive measures. The article analyzes recent clinical and epidemiological data and integrates them with social medicine approaches to develop a comprehensive prevention model.

Keywords: spinal cord, circulatory disorders, vascular pathology, social medicine, disability, prevention, rehabilitation.

INTRODUCTION

Spinal cord vascular disorders are among the most challenging neurological diseases, characterized by severe functional impairment and long-term disability. These conditions affect people of working age and lead to a substantial decline in social and professional activity. According to epidemiological data, spinal cord ischemia accounts for 5–8% of all vascular diseases of the central nervous system, yet its impact on society is disproportionately high.

The social and medical importance of spinal cord circulatory disorders is determined not only by their clinical manifestations but also by the profound socioeconomic consequences. Prolonged rehabilitation, loss of working capacity, and the need for constant medical care place a significant burden on healthcare systems and families. In recent years, the prevalence of such pathologies has been increasing due to population aging, a rise in metabolic disorders, and the growing incidence of cardiovascular diseases.

Given these factors, the early diagnosis, prevention, and rehabilitation of spinal cord vascular pathologies are becoming priority tasks in modern neurology and public health.

REVIEW OF LITERATURE

Scientific sources emphasize that spinal cord circulatory disturbances can result from thrombosis, embolism, arterial hypoperfusion, or vascular malformations. Kadykov (2005) and Novikov (2010) reported that ischemic lesions of the spinal cord often develop acutely, with clinical outcomes depending on the level and extent of vascular damage.

Romanova (2018) highlighted the importance of early MRI and angiographic diagnostics to determine the localization and severity of ischemia. Moreover, Brown et al. (2020) emphasized the significance of preventive strategies, including the management of cardiovascular risk factors and control of arterial hypertension.

From a social medicine perspective, Ermakov and Ivanov (2019) pointed out that most patients with spinal cord vascular pathology experience a drastic reduction in their ability to work, often leading to long-term disability. Consequently, the prevention of these disorders should be viewed not only as a medical task but also as a public health priority.

MATERIALS AND METHODS

This study was conducted through a systematic review of clinical and epidemiological data from 2015–2024, including publications indexed in Scopus, PubMed, and WHO databases. Statistical

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and comparative analyses were performed to assess morbidity, mortality, and disability rates associated with spinal cord circulatory disorders.

In addition, the study analyzed official epidemiological reports from the Ministry of Health of the Republic of Uzbekistan (2024), focusing on neurological morbidity trends. Preventive strategies were evaluated through an integrative approach combining medical, behavioral, and social determinants of health.

RESULTS

The analysis revealed a gradual increase in the incidence of spinal cord vascular disorders over the last decade. The majority of cases were associated with comorbid cardiovascular diseases, hypertension, diabetes mellitus, and dyslipidemia. Approximately 50% of patients developed persistent neurological deficits, significantly limiting mobility and self-care ability.

From a socio-economic standpoint, 60–70% of affected individuals were unable to resume professional activity, leading to long-term disability. This reflects the substantial economic burden imposed by these disorders on healthcare systems and society as a whole.

Preventive analysis demonstrated that regular monitoring of blood pressure, timely treatment of cardiovascular diseases, maintaining optimal body weight, and encouraging physical activity significantly reduced the risk of spinal cord ischemia. Furthermore, the introduction of screening programs and public awareness campaigns contributed to early detection and better management outcomes.

DISCUSSION

The findings confirm that spinal cord vascular disorders are multifactorial conditions involving complex pathophysiological mechanisms and significant social implications. The combination of arterial hypertension, atherosclerosis, and metabolic syndrome forms the primary etiological triad leading to ischemic spinal cord lesions.

The social dimension of this pathology cannot be ignored: long-term rehabilitation, permanent care needs, and psychosocial isolation drastically reduce patients' quality of life. Early rehabilitation programs and interdisciplinary management approaches have proven effective in reducing long-term complications and improving functional recovery.

Public health efforts should therefore focus on:

- Enhancing awareness among at-risk populations;
- Strengthening preventive medicine and early diagnostic services;
- Expanding rehabilitation and social support systems;
- Developing health education programs on cardiovascular and neurological health.

A comprehensive socio-medical model integrating clinical care, prevention, and rehabilitation is essential for reducing the burden of these disorders.

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