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HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH ARTERIAL HYPERTENSION AND METABOLIC SYNDROME

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Abstract: Arterial hypertension (AH) is recognized as one of the principal clinical manifestations of metabolic syndrome (MetS) and remains a major public health concern in the Republic of Uzbekistan and worldwide. The interaction of genetic susceptibility with environmental and lifestyle factors promotes the development of cardiometabolic abnormalities that adversely affect patients' quality of life and markedly increase the risk of cardiovascular events, disability, and premature mortality. In individuals with metabolic syndrome, several pathogenic mechanisms simultaneously contribute to vascular dysfunction and progressive cardiovascular damage. Therefore, the diagnosis of arterial hypertension should encourage comprehensive assessment for additional cardiovascular risk factors, including subclinical target-organ involvement, to facilitate early intervention and individualized management aimed at reducing long-term complications and improving patients' quality of life.

Keywords: arterial hypertension, metabolic syndrome, quality of life, cardiovascular risk, target-organ damage.

КАЧЕСТВО ЖИЗНИ ПАЦИЕНТОВ С АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИЕЙ И МЕТАБОЛИЧЕСКИМ СИНДРОМОМ

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Аннотация: Артериальная гипертензия является одним из наиболее значимых компонентов метаболического синдрома и представляет собой серьёзную проблему современной системы здравоохранения. Сочетание наследственной предрасположенности, неблагоприятных факторов

окружающей среды и особенностей образа жизни способствует развитию кардиометаболических нарушений, которые значительно повышают риск сердечно-сосудистых осложнений, преждевременной инвалидизации и смертности. Одновременное наличие компонентов метаболического синдрома оказывает неблагоприятное влияние на состояние сердечно-сосудистой системы и существенно ухудшает качество жизни пациентов. Комплексная оценка больных с артериальной гипертензией должна включать активный поиск сопутствующих факторов сердечно-сосудистого риска и признаков субклинического поражения органов-мишеней, что позволяет своевременно назначить рациональную терапию и улучшить прогноз заболевания.

Ключевые слова: артериальная гипертензия, метаболический синдром, качество жизни, сердечно-сосудистый риск, органы-мишени.

Introduction: Arterial hypertension (AH) is one of the most prevalent chronic cardiovascular diseases and represents a major contributor to morbidity and mortality worldwide. It frequently coexists with metabolic syndrome (MetS), a complex disorder characterized by abdominal obesity, insulin resistance, dyslipidemia, impaired glucose metabolism, and elevated blood pressure. The coexistence of these metabolic abnormalities substantially increases the risk of cardiovascular events, chronic kidney disease, and premature mortality while adversely affecting patients' functional status and quality of life.

The prevalence of metabolic syndrome has increased considerably over recent decades because of sedentary lifestyles, unhealthy dietary habits, and the growing incidence of obesity. Current evidence indicates that visceral adiposity and insulin resistance play central roles in the pathogenesis of MetS by promoting endothelial dysfunction, chronic low-grade inflammation, oxidative stress, and activation of neurohormonal pathways involved in blood pressure regulation. These mechanisms accelerate vascular remodeling and target-organ damage in patients with arterial hypertension.

Health-related quality of life has become an important outcome measure in patients with arterial hypertension and metabolic syndrome. Assessment of physical, emotional, and social well-being provides valuable information beyond conventional clinical and laboratory findings. Identifying the relationship between metabolic abnormalities and quality of life may contribute to earlier risk stratification, more individualized treatment strategies, and improved long-term clinical outcomes in patients with arterial hypertension.

Aim of the study: To evaluate health-related quality of life in patients with arterial hypertension associated with metabolic syndrome and to determine the relationship between quality-of-life indicators and the major clinical and metabolic components of metabolic syndrome.

Materials and methods. A cross-sectional observational study was conducted to evaluate health-related quality of life in patients with arterial hypertension associated with metabolic syndrome. The study included 46 patients with stage II arterial hypertension and 18 apparently healthy individuals who formed the control group. The diagnosis of arterial hypertension and metabolic syndrome was established according to internationally accepted clinical criteria. Patients with secondary hypertension, severe cardiovascular diseases, malignant neoplasms, acute inflammatory disorders, chronic kidney disease, or other serious systemic illnesses were excluded from the study.

All participants underwent a comprehensive clinical examination, including medical history, physical assessment, anthropometric measurements, blood pressure evaluation, and routine laboratory investigations. Body mass index, waist circumference, fasting plasma glucose, lipid profile, and fibrinogen levels were determined using standardized laboratory methods. Health-related quality of life was assessed using the Medical Outcomes Study Short Form-36 (MOS SF-36) questionnaire, which evaluates eight domains of physical and mental health.

Statistical analysis was performed using IBM SPSS Statistics software. Continuous variables were expressed as mean ± standard deviation, while categorical variables were presented as frequencies and percentages. Group comparisons were

performed using the Mann–Whitney U test, and relationships between quality-of-life scores and metabolic parameters were assessed using Spearman's correlation analysis. Differences were considered statistically significant at $p < 0.05$. All participants provided written informed consent before enrollment in the study.

Results. The study included 46 patients with stage II arterial hypertension associated with metabolic syndrome and 18 healthy individuals in the control group. Patients with metabolic syndrome demonstrated significantly lower health-related quality-of-life scores than the controls. The greatest reductions were observed in the domains of General Health, Physical Functioning, Bodily Pain, and Vitality ($p < 0.05$). Significant inverse correlations were identified between quality-of-life indicators and body mass index, waist circumference, fasting glucose, triglyceride levels, systolic blood pressure, and fibrinogen concentration. Physical Functioning showed the strongest association with metabolic abnormalities, whereas Social Functioning and Mental Health were not significantly related to most metabolic parameters. These findings indicate that metabolic syndrome has a substantial negative impact on quality of life in patients with arterial hypertension.

Conclusions: The findings of this study demonstrate that metabolic syndrome has a significant adverse effect on health-related quality of life in patients with arterial hypertension. The most pronounced impairment was observed in the domains of physical functioning, general health, bodily pain, and vitality. Quality-of-life scores were negatively associated with major metabolic abnormalities, including obesity, hyperglycemia, dyslipidemia, elevated blood pressure, and increased fibrinogen levels. Early identification and comprehensive management of metabolic syndrome may improve both clinical outcomes and patients' quality of life. Assessment of health-related quality of life should be considered an important component of routine evaluation and long-term follow-up in patients with arterial hypertension.

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