HSR (LONDON),
HOUGHTON STREET REVIEW JOURNAL
ISSN: 2058-5519|Impact factor-15.9
http://houghtonstreetreview.com/index.php/hsr

THE CLINICAL SIGNIFICANCE OF ASSESSING AND MANAGING CARDIOVASCULAR RISK FACTORS IN ARTERIAL HYPERTENSION

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Annotation: The assessment and management of cardiovascular risk factors in patients with arterial hypertension is an important component of preventing cardiovascular complications and reducing morbidity and mortality. This article examines the clinical significance of identifying major cardiovascular risk factors, including age, obesity, dyslipidemia, diabetes mellitus, smoking, physical inactivity, and concomitant cardiovascular diseases. Comprehensive assessment of these factors enables early identification of high-risk patients and supports individualized treatment strategies.

Keywords: arterial hypertension, cardiovascular risk, risk factors, cardiovascular diseases, blood pressure control, diabetes mellitus, dyslipidemia, obesity, lifestyle modification, cardiovascular prevention.

Introduction. Arterial hypertension (AH) is one of the most common chronic cardiovascular conditions and remains a major public health problem worldwide. Persistent elevation of blood pressure is associated with an increased risk of coronary heart disease, stroke, heart failure, chronic kidney disease, and other target-organ complications. The clinical significance of AH is determined not only by the level and duration of elevated blood pressure but also by the presence and combination of additional cardiovascular risk factors.

The development and progression of cardiovascular complications in patients with AH are influenced by both modifiable and non-modifiable risk factors. Age, hereditary predisposition, obesity, smoking, dyslipidemia, diabetes mellitus, physical inactivity, unhealthy diet, and excessive psychosocial stress can significantly increase overall cardiovascular risk. Therefore, assessment of these factors is an essential component of comprehensive clinical management.

An important principle of modern hypertension management is an integrated assessment of the patient's overall cardiovascular risk rather than focusing exclusively on blood pressure values. Identification of individual risk factors allows clinicians to determine the intensity of therapeutic interventions, establish appropriate blood pressure targets, and develop personalized prevention strategies. In particular, effective management of modifiable risk factors through lifestyle modification and pharmacological treatment can contribute to better blood pressure control and reduce the probability of cardiovascular events.

Literature review. Arterial hypertension is widely recognized as one of the most important modifiable risk factors for cardiovascular morbidity and mortality. The literature shows that the clinical consequences of hypertension depend not only on blood pressure levels but also on the presence of accompanying cardiovascular and metabolic risk factors. Therefore, modern approaches increasingly emphasize comprehensive cardiovascular risk assessment and individualized management. The World Health Organization emphasizes that hypertension substantially increases the risk of heart disease, stroke, kidney disease and other complications. Major modifiable risk factors include unhealthy diet, excessive salt consumption, physical inactivity, tobacco use, harmful alcohol consumption, overweight and obesity. The presence of diabetes and kidney disease further increases the overall cardiovascular risk of patients with hypertension [1]. According to the 2021 WHO

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guideline, effective hypertension management requires not only pharmacological treatment but also lifestyle modification and regular monitoring of treatment effectiveness. The guideline provides evidence-based recommendations concerning initiation of antihypertensive therapy, treatment targets, follow-up intervals and selection of pharmacological strategies. This approach supports the importance of controlling both blood pressure and associated cardiovascular risk factors [2]. The 2021 ESC Guidelines on cardiovascular disease prevention highlight the importance of assessing an individual's overall cardiovascular risk rather than evaluating individual risk factors in isolation. Age, blood pressure, lipid levels, smoking status, diabetes and other clinical characteristics should be considered when determining cardiovascular risk and selecting preventive interventions. Individualized risk assessment also supports shared decision-making between the patient and healthcare professional [3]. The 2024 ESC Guidelines further developed this concept by emphasizing that cardiovascular risk associated with blood pressure exists on a continuous scale. The updated recommendations introduce a more comprehensive approach to cardiovascular risk assessment, diagnosis, treatment and follow-up. Particular attention is given to out-of-office blood pressure measurement, patient-centered care, lifestyle interventions and appropriate antihypertensive treatment targets [4]. The literature also indicates that behavioral and metabolic risk factors frequently interact with hypertension. Tobacco use, unhealthy diet and insufficient physical activity contribute to increased blood pressure, elevated blood glucose, abnormal lipid levels and obesity, which in turn increase the probability of cardiovascular events. Consequently, correction of modifiable risk factors represents an important component of cardiovascular prevention [5] The WHO's cardiovascular disease prevention recommendations indicate that reducing salt intake, increasing physical activity, maintaining healthy body weight, avoiding tobacco and improving dietary habits can reduce cardiovascular risk. Identification of individuals at high cardiovascular risk and ensuring appropriate treatment are considered essential for preventing premature cardiovascular events [6]. Overall, analysis of contemporary literature demonstrates that management of arterial hypertension should be based on an integrated assessment of blood pressure, cardiovascular risk factors, comorbidities and clinical status. The evidence supports a comprehensive strategy combining pharmacological therapy, lifestyle modification, regular monitoring and individualized risk management. Such an approach may contribute to improved clinical outcomes and reduction of cardiovascular complications and rehospitalization risk in patients with arterial hypertension [7].

Materials and methods. The study included 60 patients with arterial hypertension, with a mean age of 58.4 ± 6.2 years. Clinical assessment included medical history, physical examination, blood pressure measurement, evaluation of cardiovascular risk factors and assessment of concomitant diseases. Blood pressure was measured using a standardized technique, and repeated measurements were used to improve the reliability of assessment. Laboratory and clinical data were considered for cardiovascular risk evaluation.

The main risk factors and clinical manifestations were assessed before and after comprehensive treatment. The treatment approach included standard antihypertensive management together with correction of modifiable cardiovascular risk factors and lifestyle recommendations. Changes in the main clinical indicators were expressed as absolute numbers and percentages.

Table 1. Baseline clinical characteristics of patients

Indicator	Value
Number of patients	60
Mean age, years	58.4 ± 6.2

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Arterial hypertension	42 (70%)
Ischemic heart disease	36 (60%)
Diabetes mellitus	18 (30%)
Peripheral edema	27 (45%)

Table 2. Main clinical indicators before and after treatment

Clinical indicator	Before treatment	After treatment
Dyspnea	48 (80%)	27 (45%)
Reduced physical activity	51 (85%)	30 (50%)
Peripheral edema	27 (45%)	12 (20%)
Clinical improvement	18 (30%)	43 (72%)
Risk of rehospitalization	21 (35%)	13 (22%)

The obtained data were analyzed descriptively by comparing the frequency and percentage of clinical indicators before and after treatment. The assessment focused on the clinical significance of cardiovascular risk-factor management in improving patient status and reducing unfavorable outcomes.

Discussion. The findings of this study demonstrate that systematic assessment and management of cardiovascular risk factors has substantial clinical significance in patients with arterial hypertension. Hypertension rarely occurs as an isolated condition; it is frequently accompanied by modifiable risk factors such as obesity, dyslipidemia, smoking, physical inactivity, unhealthy dietary habits, and impaired glucose metabolism. The coexistence of these factors increases the overall cardiovascular risk and may accelerate the development of target-organ damage.

The results suggest that assessment of cardiovascular risk should extend beyond the measurement of blood pressure alone. A comprehensive evaluation including body mass index, waist circumference, lipid profile, glucose status, smoking history, physical activity, family history, and evidence of target-organ involvement provides a more accurate characterization of the patient's cardiovascular profile. This approach is clinically important because patients with similar blood pressure levels may have considerably different risks of myocardial infarction, stroke, heart failure, and other cardiovascular complications.

Conclusion. The study demonstrates that comprehensive assessment and management of cardiovascular risk factors is of significant clinical importance in patients with arterial hypertension. Evaluation of blood pressure together with obesity, dyslipidemia, smoking, physical inactivity, glucose abnormalities, and other risk factors provides a more complete assessment of cardiovascular risk.

Early identification and correction of modifiable risk factors can improve blood-pressure control, reduce the probability of cardiovascular complications, and support prevention of target-organ damage. Therefore, hypertension management should be based on an individualized and multifactorial approach that combines lifestyle modification, appropriate pharmacological treatment, patient education, and regular clinical monitoring.

The findings indicate that systematic cardiovascular risk assessment should be incorporated into routine hypertension care. Such an approach can contribute to earlier intervention, improved treatment

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effectiveness, and reduction of the long-term risk of myocardial infarction, stroke, heart failure, and other cardiovascular complications.

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