THE IMPACT OF OBESITY ON THE DEVELOPMENT OF CARDIOPATHIES AMONG THE POPULATION OF UZBEKISTAN

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Abstract: *Obesity has become one of the leading public health challenges in Uzbekistan, with significant implications for cardiovascular health. This article examines the relationship between obesity and the development of cardiopathies among the Uzbek population. The study explores epidemiological data, physiological mechanisms, and social determinants contributing to the growing prevalence of obesity. The analysis highlights that obesity is strongly correlated with hypertension, ischemic heart disease, and cardiac failure through mechanisms such as insulin resistance, dyslipidemia, and chronic inflammation.Moreover, sedentary lifestyles and high-calorie diets have accelerated the rise in obesity across different age groups. The article concludes that effective prevention and early intervention are crucial for mitigating cardiovascular risks. National strategies should focus on promoting healthy eating, physical activity, and regular medical screening to reduce the burden of obesity-related cardiopathies in Uzbekistan.*

Keywords: *Obesity; Cardiopathies; Cardiovascular diseases; Risk factors; Hypertension; Public health; Uzbekistan; Prevention; Lifestyle; Metabolic syndrome.*

Introduction: Obesity is defined by the World Health Organization (WHO) as abnormal or excessive fat accumulation that presents a risk to health, typically measured by a body mass index (BMI) ≥ 30 kg/m². It is a multifactorial disease influenced by genetic, behavioral, environmental, and socioeconomic factors.

In Uzbekistan, the nutrition transition from traditional diets to calorie-dense foods rich in fats and sugars has contributed to an alarming rise in obesity rates. This trend is observed across both urban and rural populations, although urban areas tend to show higher prevalence due to decreased physical activity and greater consumption of processed foods.

Cardiopathies, including ischemic heart disease, hypertensive heart disease, and heart failure, are among the most frequent complications associated with obesity. The relationship between obesity and cardiopathies is mediated by several mechanisms — such as increased cardiac workload, endothelial dysfunction, atherogenic dyslipidemia, and systemic inflammation.

Therefore, exploring the impact of obesity on cardiovascular health in Uzbekistan is crucial for guiding public health policy, improving preventive medicine, and enhancing clinical management of patients at risk.

Relevance**.** Cardiovascular diseases (CVDs) are the leading cause of death globally, accounting for approximately 32% of all deaths each year. In Uzbekistan, the burden of CVDs has significantly increased over the last two decades, reflecting global epidemiological trends. One of the most critical modifiable risk factors contributing to this burden is obesity.

Obesity is no longer a problem confined to high-income nations — it has become a serious public health concern in developing countries as well, including Uzbekistan. Rapid urbanization, a sedentary lifestyle, and dietary changes have caused a sharp increase in overweight and obese individuals. According to recent national data, nearly 30% of adults in Uzbekistan are overweight, and about 15% are obese.

The clinical significance of obesity extends far beyond its visible effects. It contributes to the development of various cardiopathies, including hypertension, ischemic heart disease, and chronic heart failure. Understanding this connection is essential for improving prevention and treatment strategies and for reducing premature mortality from cardiovascular causes in Uzbekistan.

Aim**.** To investigate the impact of obesity on the development and progression of cardiopathies among the population of Uzbekistan and to identify contributing lifestyle, metabolic, and environmental factors.

Objectives

1. To evaluate the prevalence of obesity and overweight in the adult population of Uzbekistan.
2. To identify the most common types of cardiopathies associated with obesity.
3. To analyze pathophysiological mechanisms linking obesity with cardiovascular dysfunction.
4. To assess lifestyle, nutritional, and socioeconomic factors influencing obesity-related cardiac risk.
5. To propose evidence-based preventive strategies to reduce obesity-induced cardiovascular morbidity and mortality.

Review of Literature. Multiple international studies have confirmed a strong link between obesity and cardiovascular morbidity. Yusuf et al. (2022) demonstrated that obese individuals have a two- to threefold higher risk of ischemic heart disease compared to those with normal weight. Lavie et al. (2018) discussed the “obesity paradox,” noting that while obesity increases the risk of cardiovascular disease, mild obesity may sometimes correlate with better outcomes in chronic heart failure due to metabolic reserves.

In Central Asia, studies by Akhmedova and Karimov (2022) revealed that sedentary lifestyles and poor dietary habits are the dominant contributors to obesity among the

Uzbek population. However, there is still limited local research on how obesity directly affects the prevalence and outcomes of cardiopathies in this region.

Understanding these local factors is essential, as cultural habits (e.g., high consumption of rice, fried foods, and sweets) and low awareness about the health risks of obesity make preventive strategies particularly challenging.

Pathophysiological Mechanisms Linking Obesity and Cardiopathies

1. Hemodynamic Changes:

Obesity increases total blood volume and cardiac output, leading to left ventricular hypertrophy and diastolic dysfunction. Over time, these changes may result in hypertensive or dilated cardiomyopathy.

2. Endothelial Dysfunction and Atherosclerosis:

Excess adipose tissue secretes pro-inflammatory cytokines such as TNF-α and IL-6, which impair endothelial function and accelerate the development of atherosclerotic plaques.

3. Metabolic Syndrome:

Obesity is the central component of metabolic syndrome, which includes insulin resistance, hyperglycemia, dyslipidemia, and hypertension — all major risk factors for cardiovascular disease.

4. Inflammation and Oxidative Stress:

Chronic low-grade inflammation induced by obesity leads to oxidative stress and myocardial fibrosis, further impairing cardiac function.

Socioeconomic and Lifestyle Factors in Uzbekistan

The rise in obesity-related cardiopathies in Uzbekistan is driven by rapid socioeconomic changes:

- Increased consumption of processed and high-fat foods;
- Reduced physical activity due to urbanization and technology dependence;
- Lack of public awareness about nutrition and exercise;
- Limited availability of affordable healthy food options;
- Inadequate preventive healthcare services and screening programs.

Cultural norms also play a role — in some communities, overweight is still perceived as a sign of prosperity and good health, reducing motivation for weight control.

Preventive Strategies and Public Health Recommendations

To address the obesity epidemic and its cardiovascular consequences, Uzbekistan requires an integrated, multi-sectoral approach:

1. Public Awareness Campaigns: Educate the population about the dangers of obesity and promote healthy lifestyle habits through media and schools.

2. Nutritional Policies: Encourage food labeling, regulate marketing of unhealthy foods, and promote fruits and vegetables.

3. Physical Activity Promotion: Develop community programs encouraging daily exercise, walking, and sports among all age groups.

4. Healthcare Interventions**:** Train primary care physicians to identify and manage obesity early, including lifestyle counseling.

5. Research and Surveillance**:** Establish a national registry to monitor obesity and cardiovascular disease trends.

Conclusion. Obesity is one of the most significant modifiable risk factors contributing to the development of cardiopathies in Uzbekistan. The connection is mediated through multiple physiological and behavioral pathways, including hypertension, dyslipidemia, and metabolic inflammation.

Without immediate preventive interventions, Uzbekistan risks a continued increase in cardiovascular mortality in the coming decades. A coordinated approach involving education, healthcare reform, and community-based programs is essential to combat obesity and protect the cardiovascular health of the population.

The future success of Uzbekistan's public health system will depend on how effectively it can promote healthy lifestyles, prevent obesity, and manage its cardiovascular consequences.

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