Volume 4, Issue 1, January 2026 ISSN (E): 2938-3765

SUGAR DIABETES AS ONE OF THE LEADING PROBLEMS OF MODERN MEDICINE

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Abstract
Diabetes mellitus is a chronic endocrine disease characterized by a persistent increase in blood glucose levels due to absolute or relative insulin deficiency. The disease is widespread worldwide and is accompanied by the development of severe vascular and metabolic complications, leading to disability and a decrease in the quality of life of patients. The article examines the main forms of diabetes mellitus, causes and mechanisms of development, clinical manifestations, diagnostic methods, modern approaches to treatment and prevention of the disease.

Keywords: Diabetes mellitus, hyperglycemia, insulin, insulin resistance, diabetic complications.

Introduction

Diabetes mellitus, commonly known as sugar diabetes, has become one of the most pressing medical challenges of the 21st century. Characterized by chronic hyperglycemia due to impaired insulin secretion or insulin resistance, diabetes affects millions of people worldwide and contributes significantly to morbidity and mortality. The global prevalence of diabetes continues to rise, driven by factors such as sedentary lifestyles, obesity, aging populations, and poor dietary habits.

Beyond its metabolic implications, diabetes is associated with serious complications including cardiovascular disease, neuropathy, nephropathy, retinopathy, and an increased risk of infections. These complications not only diminish the quality of life of affected individuals but also impose a substantial economic burden on healthcare systems. Early diagnosis, effective management, and public health interventions are therefore essential to mitigate the impact of diabetes on society. This article examines diabetes mellitus as one of the leading problems of modern medicine, highlighting its causes, health consequences, and strategies for prevention and management.

Diabetes mellitus (DM) is one of the most significant medical and social problems of modern society. According to the World Health Organization, the number of patients with diabetes is steadily increasing, which is associated with changes in lifestyle, increased life expectancy of the population, and the prevalence of obesity. The disease requires lifelong monitoring and comprehensive treatment.

Epidemiology of diabetes mellitus. Diabetes mellitus occurs in people of all age groups. Type 2 diabetes mellitus has the highest prevalence, accounting for approximately 90-95% of all cases. Type 1 diabetes mellitus is more commonly diagnosed in children and young people. The increase in morbidity is observed in both developed and developing countries.

Classification of diabetes mellitus. According to the modern classification, the following main forms of diabetes mellitus are distinguished:

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type 1 diabetes mellitus (insulin-dependent);
type 2 diabetes mellitus (insulin-independent);
gestational diabetes mellitus;
other specific forms of diabetes (genetic defects, endocrine diseases, drug-induced diabetes).

Etiology and risk factors. The main causes and risk factors for the development of diabetes mellitus include:
hereditary predisposition;
autoimmune processes (in type 1 diabetes mellitus);
obesity and excess body weight;
sedentary lifestyle;
improper nutrition;
stressful effects;
over 40 years old.

Pathogenesis. In type 1 diabetes mellitus, the destruction of pancreatic β-cells occurs, resulting in an absolute insulin deficiency.
In type 2 diabetes mellitus, tissue insulin resistance combined with a relative insulin deficiency plays a leading role. As a result, the utilization of glucose by cells is disrupted, and chronic hyperglycemia and metabolic disorders develop.

Clinical picture. The main clinical manifestations of diabetes mellitus are:
thirst (polydipsia);
frequent urination (polyuria);
increased appetite;
decrease or increase in body weight;
general weakness and fatigue;
Skin and mucous membrane itching.
With a prolonged course of the disease, chronic complications develop.

Complications of diabetes mellitus
Complications of diabetes mellitus are divided into:
microvascular: diabetic retinopathy, nephropathy, neuropathy;
Macrovascular: ischemic heart disease, stroke, peripheral vessel damage;
Diabetic foot syndrome.

Diagnostics
Diagnosis of diabetes mellitus includes:
determination of blood glucose levels on an empty stomach;
glucose tolerance test;
determination of glycated hemoglobin (HbA1c);
urine analysis for glucose and ketone bodies;

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lipid metabolism assessment.

Treatment of diabetes mellitus

Treatment of diabetes mellitus is aimed at achieving and maintaining normal levels of glycemia and includes:

diet therapy;

dosed physical activity;

insulin therapy (for type 1 DM and, if necessary, for type 2 DM);

taking oral sugar-lowering medications;

Teaching patients self-control.

Prevention

Prevention of diabetes mellitus, especially type 2, includes:

maintaining normal body weight;

rational nutrition;

regular physical activity;

refusal of harmful habits;

early detection of carbohydrate metabolism disorders.

Conclusion

In conclusion, diabetes mellitus represents a major medical and public health concern due to its high prevalence, chronic nature, and associated complications. Effective management of the disease requires a multifaceted approach that includes lifestyle modifications, pharmacological treatment, regular monitoring of blood glucose levels, and patient education. Additionally, public health initiatives aimed at promoting healthy diets, physical activity, and early screening are critical to reduce the incidence and severity of diabetes. Addressing diabetes as a leading medical problem is essential for improving individual health outcomes and reducing the broader societal and economic impact of the disease.

Diabetes mellitus is a chronic disease that requires lifelong monitoring and comprehensive treatment. Timely diagnosis, adequate therapy, and prevention of complications significantly improve the prognosis and quality of life of patients.

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