



Keywords:

Introduction

Diabetes mellitus is a chronic metabolic disease characterized by hyperglycemia. It is a leading cause of morbidity and mortality worldwide. The prevalence of diabetes has increased significantly in recent years, particularly in developed countries. This increase is attributed to a combination of factors, including lifestyle changes, such as increased sedentary behavior and consumption of high-calorie, high-fat diets, as well as genetic predisposition. The pathophysiology of diabetes involves a complex interplay of insulin resistance and pancreatic beta-cell dysfunction. Insulin resistance is characterized by a decreased sensitivity of target tissues to the biological actions of insulin. This leads to a relative deficiency of insulin, which in turn results in hyperglycemia. Pancreatic beta-cell dysfunction refers to a decrease in the number and/or function of the insulin-producing beta cells in the pancreas. This leads to an absolute deficiency of insulin, which also results in hyperglycemia. The combination of insulin resistance and beta-cell dysfunction is the primary pathogenic mechanism in type 2 diabetes mellitus. The clinical manifestations of diabetes include polyuria, polydipsia, polyphagia, and weight loss. Long-term complications of diabetes include cardiovascular disease, nephropathy, retinopathy, and neuropathy. The management of diabetes involves a combination of lifestyle modifications and pharmacological therapy. Lifestyle modifications include regular exercise, weight management, and a healthy diet. Pharmacological therapy includes oral hypoglycemic agents and insulin. The goal of treatment is to achieve and maintain glycemic control, thereby reducing the risk of complications.

