



Introduction

The prevalence of type 2 diabetes mellitus (T2DM) has increased significantly worldwide in the last few decades. In 2013, approximately 423 million people were living with T2DM, and this number is projected to reach 642 million by 2040 [1]. The global burden of T2DM is expected to increase from 10.2% of the population in 2017 to 15.7% by 2040 [2]. The increase in T2DM prevalence is largely attributed to the rise in obesity and sedentary lifestyles, as well as changes in diet [3].

The pathogenesis of T2DM is complex and involves a combination of genetic and environmental factors. Insulin resistance, characterized by a decreased response to insulin, is a key feature of T2DM. This condition is often associated with obesity, particularly abdominal obesity, and is thought to be driven by excess adiposity and dysregulation of adipose tissue metabolism [4].

The progression of T2DM is often asymptomatic for many years, leading to delayed diagnosis and management. The clinical manifestations of T2DM include hyperglycemia, polyuria, polydipsia, and weight loss. Complications of T2DM can affect various organs and systems, including the eyes, kidneys, heart, and nerves. The economic burden of T2DM is substantial, with direct and indirect costs associated with the disease reaching billions of dollars annually [5].

The management of T2DM involves a combination of lifestyle modifications and pharmacological therapy. Lifestyle changes, such as weight loss, regular physical activity, and a healthy diet, are the cornerstone of T2DM management. The diet plays a crucial role in the management of T2DM, as it directly influences blood glucose levels and insulin sensitivity. The Dietary Approaches to Stop Hypertension (DASH) diet, which emphasizes fruits, vegetables, whole grains, and low-fat dairy products, has been shown to improve glycemic control in individuals with T2DM [6].

The Mediterranean diet, which is rich in monounsaturated fats, fiber, and antioxidants, has also been associated with improved glycemic control and reduced risk of cardiovascular complications in individuals with T2DM [7]. The American Diabetes Association (ADA) recommends a diet that is high in fiber, low in refined carbohydrates, and low in saturated and trans fats [8].

In addition to lifestyle modifications, pharmacological therapy is often required to achieve glycemic control. The most commonly used medications for T2DM are oral hypoglycemic agents, including sulfonylureas, biguanides, and dipeptidyl peptidase-4 (DPP-4) inhibitors. Insulin therapy is also used, particularly in individuals with advanced T2DM or those who are unable to achieve glycemic control with oral medications [9].

The goal of T2DM management is to achieve and maintain glycemic control, thereby reducing the risk of complications and improving quality of life. Regular monitoring of blood glucose levels is essential for this purpose. The hemoglobin A1c (HbA1c) test is the most commonly used measure of long-term glycemic control, and a target HbA1c of less than 7% is generally recommended for most individuals with T2DM [10].

In conclusion, the prevalence of T2DM is increasing rapidly, and this trend is expected to continue in the coming decades. The pathogenesis of T2DM is complex and involves a combination of genetic and environmental factors. The management of T2DM involves a combination of lifestyle modifications and pharmacological therapy. The diet plays a crucial role in the management of T2DM, and a healthy diet, such as the DASH or Mediterranean diet, can improve glycemic control and reduce the risk of complications.

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