

Abstract

Title: **Current Treatments for Type 1 Diabetes Mellitus and New Therapies for the Disease**

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Type 1 Diabetes Mellitus (T1DM) is a significant health problem affecting about 500,000 new individuals per year as of 2021, and treatment options are continually evolving. T1DM is caused by an autoimmune disease that harms the pancreas' native beta (β) cells, reducing insulin production. Genetics and metabolic changes might also contribute to disease onset. Individuals require flexible, accessible, and personalized treatments, given the variable nature of the disease in the body. As a result, proper glucose and insulin level monitoring and treatment remain critical for avoiding serious malfunctions such as diabetic ketoacidosis and staying within the body's optimal glycemic range. Insulin supplementation is crucial for Type 1 Diabetes Mellitus (T1DM) to regulate blood sugar and prevent diabetic ketoacidosis. Whether via continuous glucose monitors or various self-administered injections of insulin unique to every individual, self-administration of insulin is the most common resolution, as diabetes has no current cure. Individuals have unique insulin needs, and maintaining a balanced diet can also help regulate blood sugars, thus altering the daily need for administered insulin. Early intervention in the progression of T1DM through exercise, proper vitamin and mineral intake, and exploring alternative treatments like gene therapies, cord blood usage, and islet cell transplants could help minimize global health concerns. Access to new therapies for patients could be beneficial, but accessibility and overall knowledge of alternatives for determining future treatments are crucial. However, the safety and efficacy of the latest treatments must be ensured before they replace current gold-standard treatments.