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Abstract:

Type 1 diabetes mellitus (T1DM) is a chronic autoimmune disease resulting in the designated immune destruction of insulin producing β-cells, usually diagnosed in youth, and associated with important psychological, familial, and social disorders. Once diagnosed, patients need lifelong insulin treatment and will experience multiple disease-associated complications. There is no cure for T1DM currently. The last decade has witnessed great progress in elucidating the causes and treatment of the disease based on numerous researches both in rodent models of spontaneous diabetes and in humans. This article summarises our current understanding of the pathogenesis of T1DM, the roles of the immune system, genes, environment and other factors in the continuing and rapid increase in T1DM incidence at younger ages in humans. In addition, we discuss the strategies for primary and secondary prevention trials of T1DM. The purpose of this review is to provide an overview of this disorder's pathogenesis, risk factors that cause the disease, as well as to bring forward an ideal approach to prevent and cure the disorder.

Key Word:
Type 1 diabetes, pathogenesis, susceptibility gene, epigenetics, environmental factors, c-kit, PD-1, prevention trials.