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Are Mesenchyme Stem Cells an Effective Therapeutic Option for the Treatment of Type 1 Diabetes

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According to the International Diabetes Federation, more than 1.2 million children and adolescents are living with type 1 diabetes (T1D). T1D is a chronic autoimmune condition characterized by the loss of insulin-producing β-cells of the pancreas. Even though the exact cause of T1D is unknown, environmental variables, obesity, viral infections, and nutritional factors are believed to play a role in its pathogenesis. T1D predisposes to several micro and macro vascular complications, such as diabetic nephropathy, neuropathy, and coronary heart disease, affecting up to one in 10 adult patients within a year of diagnosis. Exogenous insulin is currently the most prevalent therapeutic option for T1D. However, it is not a cure for the condition. The pathophysiology of T1D diabetes is still unknown, making it challenging to develop novel treatments. Mesenchyme stem cells (MSCs) are a highly promising novel treatment for T1D due to their ability to differentiate into several cell types and their regenerative potential. They are postulated to act in T1D through various mechanisms, such as homing and immunomodulation. They have been found to improve blood sugar parameters such as fasting blood sugar, C-peptide, and haemoglobin A1C levels and reduce micro vascular complications associated with T1D. This review aims to discuss the role of MSCs in the treatment of T1D and its efficacy in 10 different studies conducted worldwide

Biography

Omesh Prathiraja, 25 years old from Melbourne, Australia, is a final-year medical student studying at Nanjing Medical University, China. He is currently completing his internship at 37 Military Hospital, Accra, Ghana. In the future, he hopes to specialize in intensive care medicine. He enjoys pursuing research to find new ways to help develop global health policies that will impact underserved communities.