IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 4, December 2025
Impact Factor: 7.67

Stem Cell Therapy on Diabetes Mellitus

Mr. Rathod Sahil Ramesh, Prof. Priyanka Jadhao, Dr. Mahesh Pandurang Bhosale
Dharmaraj Shaikshanik Pratisthan College of Pharmacy, Walki, Ahilyanagar

Abstract: *Diabetes mellitus is a rapidly growing global health concern that significantly impacts public health systems worldwide. In recent years, stem cell–based therapies have gained attention due to their regenerative potential and ability to restore damaged tissues, offering a promising approach for diabetes treatment. This review discusses recent progress, future prospects, and existing challenges associated with the application of stem cell therapy in diabetes management. Particular emphasis is placed on induced pluripotent stem cells (iPSCs), mesenchymal stem cells (MSCs), the development of pancreatic islet organoids, and advances toward personalized treatment strategies. The paper also examines outcomes from clinical trials to assess the safety and effectiveness of stem cell–based interventions for both type 1 and type 2 diabetes. Despite encouraging results, several limitations remain, including concerns related to safety, transplantation success rates, ethical considerations, and immune rejection. The review concludes by highlighting future directions, such as integrating stem cell therapy with conventional treatments and advancing personalized medicine, which together present new possibilities for improved diabetes care.*

Keywords: Diabetes mellitus, Stem cell therapy, Induced pluripotent stem cells (iPSCs), Embryonic stem cells, (ESCs).

DOI: 10.48175/568