

7th International Conference on

Stem Cell, Tissue Engineering and Regenerative Medicine

Poster Presentation

February 27-28, 2025 | Paris, France

Volume: 15

Exploring the regenerative potential of gingival and dental follicle stem cells in periodontal therapy

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Periodontal disease is an inflammatory infectious disease affecting the tooth-supporting structures. The conventional periodontal treatment involves root planning followed by graft material placement in the periodontal defect to replace the lost tissues. All types of mechanical treatments benefit from adjunctive microbial therapy, though no single treatment method stands out as the best option. Due to the recurrent nature of periodontitis, different strategies are explored, including the biological approach alongside conventional periodontal treatments. There is growing interest in cell-based therapies for periodontal regeneration, and this area is gaining traction. Besides, different mesenchymal cell types of various origin are also being utilized to regenerate periodontal tissues. Among the available sources of dental stem cells, dental follicle stem cells (DFCs) have been widely studied owing to their vital role in tooth development. Although DFCs are an excellent source of stem cells for periodontal regeneration, their availability is limited to non-erupted wisdom teeth, which is a major drawback. As we search, gingival mesenchymal stem cells (GMSCs) constitute more appealing alternative owing to their accessibility, availability, and ease of obtaining with minimal discomfort, as it is often discarded as a biomedical waste. However, its periodontal differentiation capacity is less explored. Both these dental derived stem cells have their unique properties. Comparing the characteristics and their multilineage properties in periodontal regeneration provide an insight into the performance of these cells.

Biography

Sonia S Shetty, has completed her Bachelor of Dental Surgery - BDS and Master of Dental surgery MDS in Periodontology, from Bangalore, India and has been in clinical practice for over 11 years. Currently doing her research fellowship, under programme to women scientists, in the area of stem cells, funded by Department of Health Research (DHR, Delhi, India), and is a registered PhD student in Institute of Bioinformatics and Applied Biotechnology (IBAB), India. Her research focus includes understanding and exploring the properties of dental mesenchymal stem cells in periodontal regeneration.