



Stem Cells in Regenerative Endodontics

*Maryam Forghani¹

¹Assistant Professor of Dental Materials Research Center and Department of Endodontics, Faculty of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran.

Background

Currently, clinical endodontics includes procedures that are based on the ability of stem cells to accomplish repair (eg, direct pulp capping, apexogenesis, apexification, and even pulpal regeneration). An attempt is made to critically assess the current status in pulp regeneration therapy.

Methods:

Systematically, 2 distinctly different strategies exist involving stem cells for the repair and/or regeneration of damaged tissues: first, the acellular approach with *in situ* stimulation of stem cells and modulation of their activity and, second, the cellular approach consisting of *ex vivo* cell culture and the use of stem cells in tissue engineering.

Result:

Desired outcome is considered important, specifically for root strengthening to the extent that teeth with regenerated pulps become more fracture resistant. Indeed, systematic assessment based on radiographs of pulp regeneration cases has shown both increased radicular wall thickness and root lengthening.

Conclusion:

The current status of stem cell-based endodontic therapy (ie, pulp regeneration) is characterized by an empirical approach. Specific opportunities exist in this area that has the potential to create meaningful changes in endodontic therapy in the near and distant future, perhaps with several unexpected consequences (eg, new diagnostic tests and outcome measures).

Key words: Stem cells, Regenerative endodontics.

Poster Presentation

***Corresponding Author:** Maryam Forghani, Assistant Professor of Dental Materials Research Center and Department of Endodontics, Faculty of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran.