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Current concepts in regenerative endodontic therapy

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In tissue engineering, there are two approaches to regenerate tissue, cell homing and cell based. Cell homing contains active recruitment of endogenous cells such as stem/progenitor cells into an anatomic compartment. In regenerative endodontic treatment, these approaches are considered as a revascularization approach to achieve continued apical formation via cell homing, and pulp/dentin regeneration via tissue engineering technology. Pulp revascularization is a cell homing approach for treating immature permanent teeth. With introducing of bleeding into root canal, SCAP (stem cells from apical papilla) migrate and induce dentin formation. Also blood clot contains growth and differentiation factors that may be important for successful revascularization of the empty pulp canal. The regeneration of dental pulp by cell homing, rather than by cell delivery, can accelerate clinical translation, although stem cell-mediated tissue regeneration has more optimal results and has the capability of *de novo* regeneration of pulp and new dentin. By contrast, there are some drawbacks and variables in relation to this treatment approach. This lecture will analyze current clinical treatment protocols including mechanical instrumentation, irrigation, intracanal medicaments, intracanal bleeding, coronal barrier and outcomes of regenerative endodontic therapy.

Biography

Hacer Aksel received D.D.S degree from Marmara University, Turkey, in 2010. She maintains a position in the Department of Endodontics of Hacettepe University, Turkey. She joined Columbia University Center for Craniofacial Regeneration and Department of Bioscience Research, The University of Tennessee, Health Science Center as a visitor research scholar. She has several presentations about clinical endodontics and regenerative endodontics in several countries, including North and South America, Europe and Middle East.

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