"EFFECT OF BIOCERAMIC PULP CAPPING MATERIALS ON STEM CELLS DERIVED FROM HUMAN DENTAL PULP: AN INVITRO STUDY"

By

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ABSTRACT

AIMS AND OBJECTIVES:

- To evaluate and compare the cytotoxicity of bioceramic pulp capping materials i.e MTA Plus, Biodentine, and Endocem Zr on stem cells derived from human dental pulp and to assess the adhesion of hDPSCs on these bioceramic pulp capping materials.

METHODOLOGY:

- hDPSCs were isolated from extracted maxillary premolars by using the explant method. Material disks were made using a brass mold of diameter 10 mm and thickness 2 mm. Set materials were placed in 24 well polystyrene tissue culture plates and seeded with 20,000 cells/well.
- After 1,3 and 7 days of incubation ,cell viability was measured using MTT assay with microplate reader at 570 nm .SEM was used to visualize the attachment of materials on the surface.
- Statistical analysis was carried out by Kruskal Wallis for intragroup and Friedman's test for intergroup comparison.

RESULTS AND CONCLUSION:

- All the 3 tested materials showed no cytotoxic effects on HDPSCs .No significant difference was observed in intergroup and intragroup comparisons. MTA Plus had higher cell attachment when compared to other materials. Within the limitations of this experiment MTA Plus, Biodentine and Endocem Zr, all were biocompatible with HDPSCs.

KEYWORDS : Biodentine, cell viability ,Endocem Zr, MTA Plus, SEM