SUCCESS RATES OF INDIRECT PULP THERAPY USING CALCIUM HYDROXIDE AND MINERAL TRIOXIDE AGGREGATE PULPOTOMY IN THE TREATMENT OF DEEP DENTINAL CARIES IN PRIMARY SECOND MOLARS-AN INVIVO STUDY.

by

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Background and objectives: Management of the grossly decayed primary molar is common and also challenging to the pediatric dentist. Vital pulp therapy is the preservation of deep carious primary teeth in which deep caries extends across one or more surfaces of the tooth and closely approximates the pulp. The intent of such therapy is to treat reversible pulp injuries in order to maintain pulp vitality and function so that the primary tooth is preserved until natural exfoliation.

Traditionally there are two treatment modalities for vital primary teeth which includes indirect pulp therapy (IPT) and pulpotomy. The indications for IPT and pulpotomy are identical i.e, reversible pulpitis or a normal pulp where the pulp is judged to be vital from clinical and radiographic criteria. Enormous research and review in vital pulp therapy gave rise to a question, if primary tooth pulpotomy is out of date, and should IPT replace pulpotomy? Hence the objectives of this study was to evaluate the success rates of IPT using calcium hydroxide and MTA pulpotomy clinically and radiographically at an interval of 6 weeks, 3 months and 6 months.

Methods: The study population consisted of children whose pulpal status warranted vital pulp therapy reporting to the Dept of Pedodontics, SDM school of dental sciences Dharward, India. 80 primary second molars were selected and randomly divided into two therapeutic groups of 40 each. In Group1 all the carious dentin around the periphery of the lesion was removed leaving affected dentin and IPT was done with calcium hydroxide paste. In Group2 following removal of the coronal pulp, hemostasis was obtained and pulp stumps were covered with an MTA paste followed by stainless steel crown. Follow up evaluation was done at an interval of 6weeks, 3months and 6months.

Results: The follow-up evaluation revealed 100% clinical success in teeth treated with MTA pulpotomy and one radiographic failure of internal resorption detected at 3months.There was 100% clinical and radiographic success with teeth treated with IPT. Though there was one radiographic failure with MTA pulpotomy it was not statistically significant ($p>0.05$).

Conclusion: This study showed 100% success with both the groups except for one radiographic failure of internal resorption in Group2 detected at 3months follow up. This could be attributed to presence of chronic inflammation in the radicular pulp prior to pulpotomy. IPT offers advantages over pulpotomy like fewer potential side effects, non invasive, decreased chair time, patient cooperation and cost effectiveness.

Key words: *IPT, MTA pulpotomy, Deep dentinal caries, Primary second molars*