

## **Calcium-Enriched Mixture And Bioactive Glass For Pulp Capping Of Sound Primary Teeth: A Randomized Clinical Trial**

### **ABSTRACT**

**Background and Aim:** Direct pulp capping is a conservative vital pulp therapy which has some limitations in primary dentition. The aim of this study was to evaluate pulpal response of primary teeth after direct pulp capping with two biocompatible materials, Calcium-Enriched Mixture and Bioactive Glass.

**Methods and Materials:** In this randomized clinical trial with split-mouth design, after attaining informed consent, 20 sound primary canines scheduled for orthodontic extraction, were selected. After mechanical pulp exposure, the exposed site was capped with either CEM cement or BAG and then restored with amalgam. The teeth were extracted after two months and examined histopathologically. Parameters of hard tissue bridge (HTB) formation, its type and quality as well as pulpal inflammation scores were compared between the two groups. The data were analyzed using the Mann Whitney U and Fisher's exact test. The level of significance was considered at 0.001.

**Results:** All CEM specimens showed inflammation score of 0 (less than 10%). However, In the BAG group, inflammation scores of 0 (less than 10%) was seen in 3 cases and inflammation scores of 1(10%-30%) in 3cases and inflammation scores of 2 (30%-50%) in 4 cases ( $P<0.001$ ). HTB was formed in all CEM specimens while it was developed in 1 specimens of BAG ( $P<0.001$ ). All CEM specimens showed normal pulp; only two cases in BAG group (20%) demonstrated uninflamed normal pulp.

**Conclusion:** CEM cement was superior to BAG as a DPC agent in terms of HTB formation and pulp inflammation scores.

**Keywords:** Bioactive glass; Calcium-Enriched Mixture; Direct Pulp Capping; Primary Teeth