

## **ABSTRACT:**

### **AIM:**

The aim of the study is to compare the pulpal response of human premolars to direct pulp capping with MTA and BIODENTINE by light microscopic histological evaluation.

### **MATERIALS AND METHODS:**

Direct pulp capping procedure was carried out on human premolars scheduled for orthodontic extractions under local anaesthesia. Class I cavities were prepared and MTA or BIODENTINE was placed over the exposed pulp, followed by composite restoration. A total of 42 teeth were subjected to direct pulp capping. After the experimental periods of 7, 30, and 90 days the teeth were extracted and histological processing was carried out. The test materials were evaluated histologically for the degree of inflammation, dentin bridge formation and thickness of dentin bridge at all the three different observation periods.

### **RESULTS:**

At 7 days observation all the samples in group I and II showed mild inflammatory response. At 30 days thin or partial dentin bridge was evident in all the samples in both groups. At 90 days all the samples in both groups showed evidence of complete dentin bridge formation. There was no statistically significant difference between the two groups in all the three criteria.

### **CONCLUSION:**

Biodentine was effective in inducing a pulpal reaction with minimal inflammation and dentin bridge formation, comparable to MTA .

**Key words:** MTA, Biodentine, histologically.