

## **ABSTRACT**

### **Aim**

My study was designed to compare the microleakage patterns beneath the bands cemented with four different brands of Resin modified glass ionomer cements (GC Fuji Ortho Band paste pak, GC Fuji CEM, GC Fuji ORTHO LC, GC Fuji PLUS) in order to achieve minimal enamel demineralization during orthodontic treatment.

### **Materials and Methods**

Sixty freshly extracted mandibular first permanent molars were randomly divided into 4 groups of twenty teeth each. Microtched bands in the each group were cemented to enamel with one of the four Resin modified Glass Ionomer Cements: GC Fuji Ortho Band paste pak, GC FujiCEM, GC Fuji Ortho LC, GC Fuji PLUS. Teeth were stored in a 10% formalin solution. Basic Fuchsine dye was used for microleakage evaluation. Teeth were sectioned bucco-lingually by a hard tissue microtome. The microleakage at the cement-enamel, cement-band interfaces from both the buccal and lingual margins were determined by a stereomicroscope.

### **Statistical Analysis**

Statistical evaluation of microleakage values within the groups was performed with a nonparametric test, Mann-Whitney U test. Overall microleakage comparisons between the groups were performed with ANOVA and Post Hoc Test was used for multiple comparisons.

## **Results**

The buccal and lingual sides had similar microleakage scores for all cements at the cement-enamel and cement-band interfaces. Statistical comparisons showed statistically significant differences among the band cements between both interfaces. When the cement systems were compared, teeth banded with Fuji PLUS showed the highest leakage scores and Fuji CEM showed the least scores between the cement-enamel and cement-band interfaces. Fuji Orthobond Paste pak and Fuji Otho LC had microleakage scores between Fuji PLUS and Fuji CEM.

## **Conclusion**

GC Fuji CEM is associated with the least microleakage scores than GC Fuji Ortho band Paste pak , GC Fuji Ortho LC and GC Fuji Plus at both the cement-enamel and cement-band interfaces.

Key words:- sandblasting, Microleakage, enamel demineralization, stereomicroscope,