**EVALUATION OF MORPHOLOGICAL AND CHEMICAL ALTERATIONS IN ENAMEL, DENTIN AND CEMENTUM AFTER INTERNAL BLEACHING TECHNIQUE USING DIFFERENT BLEACHING AGENTS**

**Abstract**

Objective: The aim of this study was to evaluate the morphological and chemical alterations in enamel, dentin and cementum after internal bleaching using scanning electron microscopy (SEM) and energy dispersive spectrometry (EDS).

Material and methods: Seventy-two bovine incisor teeth were prepared and cut and were bleached for 7 days as follows: HP: 35% hydrogen peroxide gel; HP+SP: 35% hydrogen peroxide gel + sodium perborate; CP: 37% carbamide peroxide gel; CP+SP: 37% carbamide peroxide gel + sodium perborate; SP: sodium perborate + water; and control: deionized water. The specimens were sectioned and prepared for morphological analysis under SEM and analysis of calcium, phosphorus, oxygen and carbon levels using EDS.

Results: Calcium levels were significantly higher (p<0.05) with SP and the morphological alterations proved that this bleaching agent caused less significant effects on the tooth structures.

Conclusions: Alterations in the enamel, dentin and cementum compositions occurred after bleaching and these alterations showed to be less significant with SP + water.

Keywords: carbamide peroxide; hydrogen peroxide; scanning electron microscopy; sodium perborate; tooth bleaching.