

The Effect of Glazing and Polishing on color stability of CERAMCO III dental Porcelain in Chlorhexidine mouth rinse

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Abstract

Background and Aim: In the past twenty years, widespread using of synchronous dental restorations, engendered many challenges resulting in different questions regarding to the method of surface preparation of the porcelain restorations and its relationship with discolorations in long-term use. The effect of mouth rinses on discoloration of dental ceramics with different surface preparations faces an information gap across the studies, which has made by now. This study has conducted to evaluate the effect of chlorhexidine mouth rinse on color stability of CERAMCO III dental porcelains.

Materials and Methods: This experimental study conducted under in-vitro conditions. A number of 20 disc-shaped specimens prepared and divided to two groups of glazed and polished porcelain. After baseline color measurements, for a period of 30 days all specimens were immersed in 200ml of 0.2% Chlorhexidine mouth rinse under controlled environmental conditions. By the end of this immersion process, the color change of the specimens measured using a spectrophotometer device. The Data were statistically analyzed using 2-Way ANOVA. Overall color changes was determined using the CIE-L*a*b* system.

Result: All the specimens displayed color changes after immersion in considered solution. Polished specimens exhibited a little bit more color change in two coordinates, but color shift of both groups were relatively the same and they were not statistically significant. 0.98 ± 0.08 and 0.81 ± 0.19 in polished and glazed group respectively. ($p < 0.05$)

Conclusion: The color stability in both groups of polished and glazed porcelains are clinically acceptable, and the different surface preparation methods has no significant effect on porcelain surface discoloration in Chlorhexidine mouth rinse solutions.

Keywords: Color stability, porcelain, Chlorhexidine.