

Abstract

Investigation of the effect of accelerated aging on the color stability of cloud shade composites and nano hybrid composite resins.

Introduction: The most important challenge for composites is maintaining and enhancing factors related to tooth color coordination and restorative composite. The aim of this study was to determine the effect of accelerated aging on the color stability of cloud shade composites and nano-hybrid composite resins.

Materials & Methods: In this laboratory study, 24 disk samples were prepared and cured by halogen light. After preparation, it was stored in physiological serum as artificial saliva. Samples from the two general groups Ceram.x and G-aenial were examined in 2 shades, bw and A2, respectively. After preparing the samples, they were stained at 24 hours after sampling, one week after sampling and after accelerated aging, respectively, and the data were stored in the CIE system. After passing the accelerated aging period and color determination for the third time, the amount of delta E between the groups was measured and finally analyzed using Independent t-test

Results: Comparison of the mean total color changes of the discs showed that in all shades there were color changes due to accelerated aging and these changes were below $DE = 3.3$. And no significant difference was observed between shades in terms of curing changes, aging process changes and total changes in Ceram.x and G-aenial composites ($P < 0.05$). and the color changes of Ceram.x and G-aenial composite groups with A2 and BW shades were not significantly different from accelerated aging ($P < 0.05$).

Conclusion: In the present study, no significant difference was observed in terms of color stability of cloud shade composites and nano-hybrid composite resin. Color changes were clinically acceptable according to the accelerated aging method used and in all cases and groups the shift of color changes to yellow (+ b) was dark (L).

Keywords: Color stability, Accelerated aging, Resin composite.