

Effects of acidulated phosphate fluoride gels on the surface of composite resins

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Abstract

In this study, we evaluated the interactions between different composite resins and different APE gels. Five different brands of fluoride agents (Topical Jonoflour, Topex, Fluoride gel, 60 SECOND Taste gel, and Fluorident gel) were assessed in the study. These materials were applied to 4 different composite resins (Clearfil AP-X, Tetric Ceram, Filtek Z350, and Grandio). The study examined surface morphological changes of the composite resins when exposed to the APE agents. The fluoride changes in surface roughness (Ra) and surface morphology using a surface profilometer and scanning electron microscopy (SEM). We reached the following conclusions. (1)The severity of influence of APF gels on composite resin surfaces is material dependent. (2)The surface roughness or morphological changes of the nano-composite resin was also affected as that of the hybrid or nano-hybrid composite resins when APF gels were applied. The loss or dissolution of the filler and matrix corresponding to increasing porosity and surface roughness was noted to have occurred to various extents.