

EFFECT OF FLUORIDE ACQUISITION ON THE SURFACE TOPOGRAPHY OF DIFFERENT FISSURE SEALANTS FORMULATION

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ABSTRACT

This study was directed to investigate the effect of topical application of flourides (Gel & Sol) on the surface topography of the immediately cured and stored (up to 6 months) 2 types of fissures sealants. Bis GMA & resin modified glass Ionomer. 75 samples of each type of fissure sealant were constructed by the help of a stainless steel mold with a central opening of 5 mm in diameter and 3mm height. At the end of storage time on week, on month, 3 months and 6 months, the fluoride (sol. Or gel) was applied topically on top of the surface of each sealant specimen for 4 minutes by the aid of a small cotton pellet. The control (untreated) and the tested (treated) top surfaces of the specimens were then washed under running water for 30 seconds and dried with oil free air for another 30 seconds. The surface topography of each top surface of the treated fissure sealants was evaluated through quantitatively by measuring the surface roughness (Ra) by using surface profile tester (perthometer) and qualitatively by Scanning Electron Microscopy (S.E.M.)

Statistical analysis of variance (ANOVA), Unpaired (t) test and student "t" test revealed that the lowest surface roughness was recorded for specimens which were treated by topical application of either fluoride gel or solution after 1 week storage time. Then increased by increasing the storage time and there was a significant difference at P value < 0.01 between the control and tested groups for both types of fissure sealants and that topical application of flouride gel exhibit higher values of mean surface/ roughness in comparison of those specimens treated topically with fluoride solution. Scanning Electron microscopy showed that resin modified glass Ionomer sealant treated with fluoride gel exhibit massive surface change after 6 months storage time in comparison with bis GMA resin sealant.

INTRODUCTION

Reaching the second millennium, the dental profession and the public shift further out of the restorative dentistry dominated era into the disease prevention and health promotion era. The most widely used present preventive topical fluoride anti-caries preparations with its large number of product types, including professionally applied solutions, gel, prophylactic pastes and varnishes, and

patient applied products such as dentifrice's and mouth-rinses⁽¹⁻³⁾, also were used for caries prevention.

The sealing of pits and fissures has been generally recognized as a procedure relevant to preventive dentistry⁽⁴⁾. The most widely used present day fissure sealants are based on Bis. GMA resins^(5,6) and glass Ionomer cement⁽⁷⁾. Resin sealant, however, suffer from certain disadvantages^(8,9).

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