

Introduction

The use of esthetic resin composites has increased over the past decades mainly due to the patient's esthetic concerns and improvements in the technology of products. With the advent of sandwich restorations the problems related to composites such as recurrent caries and post-operative sensitivity have drastically reduced. Studies have shown improvement in bond strength of composite to glass ionomer when conditioners were used on glass ionomer surface.

Aims and Objectives

This study was done to evaluate the effect of four different conditioners on the bond strength of composite to glass ionomer and to examine the resulting etched glass ionomer surface under Scanning Electron Microscope.

Methodology

Fifty glass ionomer discs were prepared in stainless steel moulds. It was divided into five groups of 10 moulds each out of which seven samples were tested for bond strength and remaining three samples were evaluated for scanning electron microscopic analysis. Group I is control without any surface treatment. Group II, III, IV and V were conditioned with 35% phosphoric acid, 10% polyacrylic acid, 10% citric acid and 35% trichloroacetic acid respectively. Adper single bond 2 was applied to all the specimens. Filtek Z350 XT light cure composite were place on the glass ionomer surface and light cured. All specimens were stored in deionized water for 24 hours at 37⁰C before shear bond strength testing. The remaining three samples were

conditioned with four different conditioners, gold sputtered and examined under scanning electron microscope.

Results and Observations

The values obtained were tabulated and statistically analysed using ANOVA and Dunnett's test and it revealed significant differences in bond strength among groups. Significantly higher bond strength values were observed in group treated with 35% Phosphoric acid followed by 10 % Polyacrylic acid, 10% Citric acid and 35% trichloroacetic acid when compared with group without any surface treatment. SEM observations revealed least salt crump formation in specimens treated with 35% phosphoric acid. Salt crump formation was greater in specimens treated with 35% trichloroacetic acid.

Conclusion

Under the limitations of this study it was found that the shear bond strength of composite reins to resin modified glass ionomer was increased following surface treatment.

Clinical significance

The use of conditioners will effectively improve the bonding between composite and glass ionomer.

Key words : RMGIC, Resin composite , Sandwich technique ,Surface conditioners