

**AN EVALUATION OF THE EFFECT OF MODIFIED CARISOLV
GEL ON SHEAR BOND STRENGTH OF REPAIRED LIGHT CURE
COMPOSITE AND COMPOMER RESTORATIONS**

(IN VITRO STUDY)

A thesis
Submitted to the Council of the College of Dentistry
at the University of Baghdad
in Partial Fulfillment of the Requirements
For the Degree of Master of Science
in Conservative Dentistry

By
Rasha Hameed Jihad
B.D.S.

Supervised by
Professor Dr. Haitham J. Al-Azzawi
B.D.S. M.Sc.

January
2007

Muharam
1428

Abstract

This in vitro study was conducted to evaluate the effect of modified Carisolv gel on the shear bond strength of delay repaired light cure composite (Helio Progress) which is a microfilled composite and compomer (Dyract≡eXtra) restorative material.

Sixty acrylic blocks (25x25x10mm) were constructed from cold cure acrylic resin, each one contained a cylindrical hole (6mm diameter & 3mm depth). Thirty acrylic blocks were filled with Helio Progress composite resin and the others were filled with Dyract≡eXtra compomer restorative material. The surface layer of the restoration sample was light cured through plastic strip. All specimens were stored in deionized distilled water for one week at 37 C°, abraded by finishing discs and rinsed with deionized distilled water for 15 seconds. The thirty specimens of each material were randomly divided into three groups according to the surface treatment they received.

Repair was done by using a standardized translucent plastic straw (3mm diameter & 6mm length) and was filled with restorative materials and light cured for 40 seconds in four directions. All the specimens were stored in deionized distilled water for 24 hour.

Testing was done by the Instron testing machine applying shearing force with specially designed chisel-shape rod applied at the interface between the initial and repaired restorations.

The data were statistically analyzed using Analysis of Variance test (ANOVA) and student t- test.

The results revealed that surface treatment with Carisolv alone gave significantly higher repair shear bond strength for composite and compomer groups when compared with groups treated with phosphoric acid alone.

Combination of Carisolv and phosphoric acid surface treatment yielded high repair shear bond strength for composite and compomer groups when compared with groups treated with Carisolv alone but it is statistically not significant. However, combination of Carisolv and phosphoric acid surface treatment gave significantly higher repair shear bond strength for composite and compomer groups when compared with groups treated with phosphoric acid alone.

Composite material yielded shear bond strength values higher than that of compomer material but it is statistically not significant.