

*The Effect of Modified Carisolv Gel on  
Microleakage of Repaired aged Composite  
Restoration using different bonding systems  
(IN VITRO STUDY)*

*A Thesis*

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*By*

***Ammar Azziz Lateef**  
**B.D.S***

*Supervised by*

***Professor. Dr. Haitham Al- Azzawi**  
**B.D.S. M.Sc.***

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***Jamada Al-Akhera 1429***

## ABSTRACT

This in vitro study was conducted to evaluate the effect of modified Carisolv gel on micro leakage of delay repaired light cured composite (Swisstec) which is a highly filled fine hybrid composite.

Sixty specimens were prepared using ready made plastic molds (used for medical tabs 2.5mm depth and 8mm diameter), all specimens were stored in artificial saliva solution in an incubator with a constant temperature at 37C°

For one month, the surface layer was abraded using coarse aluminum oxide abrasive discs, washed with air-DDW for 15sec, specimens were divided into three groups according to bonding agent used, group A (n=20) using I-Bond, group B (n=20) using clearfil SE bond, group C (n=20) using Swisstec SL bond, each group subdivided into 2 subgroups according to surface treatment with Carisolv gel, GA1 (Carisolv+I-Bond), GA2(I-Bond), GB1(Carisolv+clearfil SE bond), GB2(clearfil SE bond), GC1(Carisolv+Swisstec SL bond), GC2( Swisstec SL bond). Repair was done by loading a plastic mold with swisstec composite and placed on the aged composite, cured from each side for 20sec, all specimens were thermocycled 10 cycles/day for 7 days between 5±2C° and 55±2C° , stored in bottles containing methylene blue dye in an incubator at 37C° for 48 hrs, washed thoroughly and left at room temperature for 2 hrs for dryness and dye fixation.

All specimens were sectioned by a sectioning machine and examined using stereomicroscope under magnification of 4X to determine the degree of micro leakage in mm.

The data were statistically analyzed using Analysis of Variance test (ANOVA), student t-test and LSD test; the results revealed that surfaces treated with Carisolv gel exhibited less micro leakage than those without treatment with Carisolv gel and the difference was highly significant , surface treatment with Carisolv and phosphoric acid showed minimum leakage comparing to surfaces treated with Carisolv gel or phosphoric acid separately, considering bonding agents total etch bonding (Swisstec SL bond) exhibited less micro leakage than Clearfil SE bond and I-Bond, the difference was highly significant, Clearfil SE bond showed less micro leakage than I-Bond and the difference was highly significant too..