

**MARGINAL LEAKAGE OF AN  
IMMEDIATE AND DELAY  
REPAIRED LIGHT – CURE  
COMPOSITE RESTORATION  
WITH DIFFERENT SURFACE  
TREATMENT**

**( INVITRO STUDY )**

**Atthesis**

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## ABSTRACT

Defects in composite resin restoration whether discovered at the time of placement or associated with old composite resin restoration could be repaired without replacing the entire restoration .

This is invitro study was conducted to determine and compare the marginal leakage of an immediate and delay repaired light – cure composite restoration and to assess the effect of acid and / or bonding agent on this marginal leakage .

Eighty plastic ready made molds were used to make the composite resin ( tetric ) samples . The surface layer of the composite sample was light cured through plastic strip , abraded with green rubber bur and rinsed with deionized distilled water for 15 sec.

The eighty samples were divided into 2 groups according to the storage time in deionized distilled water before the repair :

GROUP I stored for 15 min ( immediate repair group ) .

GROUP II stored for 1 week ( delay repair group ) .

Both groups were subdivided into 4 groups according to the surface treatment they received :

Subgroup 1 : no treatment ( control ) .

Subgroup 2 : 37 % phosphoric acid etchant ( 15 sec. ) .

Subgroup 3 : stae bond ( light activated for 20 sec. ) .

Subgroup 4 : 37 % phosphoric acid and stae bond .

Repair was done by using the same standarized transtuent mold after cutting with a scissors and was filled with the glacier composite and applied on the old composite ( tetric ) and light cured for 40 sec. In four directions . then the specimen ( old and new composite ) was put in a standarized translucent mold filled

with cold cure acrylic and after polymerization of the acrylic the blocks were sectioned into two equal halves by sectioning device and thermocycled 10 cycles / day for 7 days then put in pelikan ink for 48 hr , washed , dried for 2 hr in room temperature , and examined with stere microscope 4x .

Data obtained were statistically analyzed using analysis of variance test , t-test and LSD test .

With the control group the results showed that there was a marked reduction in marginal leakage for delay repair .

The surface treatment with 37% phosphoric acid showed very high statistically significant difference between immediate and delay repair .

The surface treatment with the bonding agent increased the leakage in immediate and reduced it in delay repair . However the effect statistically was not significant .

All the subgroups showed marginal leakage .