

**PENGARUH TOPIKAL APLIKASI FLUOR TERHADAP KEBOCORAN TEPI
FISSURE SEALANT ANTARA BAHAN RESIN BISPHENOL
A-GLYCIDIL METHACRYLATE DENGAN
RESIN KOMPOSIT SELF-ADHERING FLOWABLE
(Kajian secara *in-vitro* dengan mikroskop stereo)**

INTISARI

Topikal aplikasi fluor (TAF) kurang efektif digunakan pada bagian pit dan fissure sehingga dibutuhkan perawatan *fissure sealant* untuk mencegah terjadinya karies. Resin *Bisphenol A-Glycidil Methacrylate* (Bis-GMA) merupakan bahan *fissure sealant* yang diawali tahap etsa asam. Resin komposit *self-adhering flowable* merupakan resin komposit dengan satu tahap aplikasi. Pemberian TAF membuat kemampuan adhesi antara resin dan permukaan email dipertanyakan. Tujuan penelitian ini mengetahui pengaruh TAF terhadap kebocoran mikro *fissure sealant* resin Bis-GMA dan resin komposit *self-adhering flowable* dan mengetahui bahan yang lebih baik.

Penelitian eksperimental laboratoris pada 24 gigi premolar, dibagi menjadi 2 kelompok yaitu tanpa dan dengan pemberian TAF. Setiap kelompok dibagi menjadi kelompok *fissure sealant* dengan resin Bis-GMA dan resin komposit *self-adhering flowable*. Gigi direndam dalam *methylene blue* 5% dan diamati panjang kebocoran mikro melalui mikroskop stereo menggunakan satuan millimeter. Analisis data menggunakan ANAVA dua-jalur, dilanjutkan LSD.

Hasil menunjukkan rerata panjang kebocoran tepi kelompok dengan pemberian TAF sebelum aplikasi resin Bis-GMA (0.51 ± 0.69), resin komposit *self-adhering flowable* (5.33 ± 1.50) lebih tinggi dibandingkan tanpa pemberian TAF sebelum aplikasi *Resin Komposit Bisphenol A-Glycidil Methacrylate* (0.13 ± 0.17), resin komposit *self-adhering flowable* (0.99 ± 0.78) dengan perbedaan signifikan ($p < 0.05$). Rerata panjang kebocoran tepi pemberian TAF dengan pemberian aplikasi *fissure sealant* resin Bis-GMA dibandingkan dengan resin komposit *self-adhering flowable* menunjukkan perbedaan panjang kebocoran tepi yang signifikan secara statistik ($p < 0.05$). Kesimpulan adalah TAF menyebabkan kebocoran mikro *fissure sealant* resin Bis-GMA dan resin komposit *self-adhering flowable*.

Kata kunci: topikal aplikasi fluor; *fissure sealant*; kebocoran tepi

**EFFECT OF TOPICALLY APPLIED FLUORIDE ON MARGINAL LEAKAGE
FISSURE SEALANT BIS-GMA BASED AND SELF-ADHERING
FLOWABLE COMPOSITE
(In-vitro assessment with stereo microscope)**

ABSTRACT

Topically applied fluoride (TAF) are less effective in pit and fissure area, so fissure sealant is needed to prevent caries. Bis-GMA resin required etching procedures for 30 seconds before being applied. Flowable self-adhering composite resins are flowable composite resins with one application. TAF makes the adhesion ability between resin and the surface of the enamel questionable. The purpose of this study was to determine the effect of TAF on fissure sealant marginal leakage with Bis-GMA resin material and composite resin self-adhering flowable to find better fissure sealant materials.

Study were conducted as laboratory experimental studies on 24 premolar teeth divided into 2 groups with and without TAF. Each group was divided into fissure sealant groups with Bis-GMA resin and flowable self-adhering composite resin. Samples soaked in 5% methylene blue observed for the length of the edge leak through a stereo microscope using millimeters. Data analysis using two-way ANOVA followed by LSD.

Results showed mean length of the group with TAF prior to the application of Bis-GMA (0.51 ± 0.69), flowable self-adhering composite (5.33 ± 1.50) higher than without TAF prior to application of Bis-GMA resin (0.13 ± 0.17), self-adhering flowable composite (0.99 ± 0.78) with a significant difference ($p < 0.05$). The mean length of marginal microleakage administered by TAF with the application of Bis-GMA resin fissure sealant compared to composite self-adhering flowable resin showed a difference in marginal leakage length that was statistically significant ($p < 0.05$). The conclusion was TAF increased the marginal leakage fissure sealant material for Bis-GMA resin and flowable self-adhering composite resin.

Keywords: topical application fluoride; fissure sealant; marginal microleakage