

**KELARUTAN RESIN MODIFIED GLASS IONOMER CEMENT
DAN ENHANCED-RESIN MODIFIED GLASS IONOMER
CEMENT DALAM SALIVA pH ASAM DENGAN
LAMA PERENDAMAN 1, 7, 14 HARI**

INTISARI

Resin modified glass ionomer cement (RMGIC) dan *enhanced-resin modified glass ionomer cement (E-RMGIC)* merupakan bahan restorasi yang dikembangkan untuk meningkatkan sifat mekanis, estetika, dan bioaktif dari *glass ionomer cement (GIC)*. Tujuan dari penelitian ini adalah mengetahui kelarutan bahan restorasi RMGIC dan E-RMGIC yang direndam dalam saliva pH asam dengan lama perendaman 1, 7, dan 14 hari.

Spesimen penelitian berbentuk silinder dengan diameter 15 mm dan ketebalan 1 mm (ISO 4049: 2019). Jumlah spesimen sebanyak 48 buah ($n=48$) yang dibagi menjadi dua kelompok berdasarkan jenis bahan restorasi (I=RMGIC; II=E-RMGIC). Masing-masing kelompok kemudian dibagi menjadi tiga subkelompok berdasarkan lama perendaman (A=1 hari; B=7 hari; C=14 hari) sehingga terdapat enam kelompok perlakuan (IA, IB, IC, IIA, IIB, dan IIC). Nilai kelarutan bahan restorasi diukur dengan melakukan penimbangan massa spesimen sebelum dan setelah perendaman dalam saliva pH asam. Data hasil penelitian dianalisis menggunakan uji Anava dua jalur dan *Tukey's Post Hoc* ($\alpha=0,05$).

Hasil penelitian menunjukkan bahwa jenis restorasi berpengaruh secara signifikan terhadap kelarutan bahan restorasi ($p < 0,05$), lama perendaman berpengaruh secara signifikan terhadap kelarutan bahan restorasi ($p < 0,05$), dan interaksi antara jenis bahan restorasi dengan lama perendaman tidak signifikan ($p > 0,05$). Kelarutan RMGIC lebih tinggi dibandingkan E-RMGIC dan nilai kelarutan meningkat seiring bertambahnya lama perendaman.

Kata kunci: Kelarutan, *Resin Modified Glass Ionomer Cement*, *Enhanced-Resin Modified Glass Ionomer Cement*, Saliva pH Asam, Lama Perendaman

**SOLUBILITY OF RESIN MODIFIED GLASS IONOMER CEMENT
AND ENHANCED-RESIN MODIFIED GLASS IONOMER
CEMENT IN ACIDIC SALIVA AT IMMERSION
TIMES OF 1, 7, 14 DAYS**

ABSTRACT

Resin modified glass ionomer cement (RMGIC) and enhanced-resin modified glass ionomer cement (E-RMGIC) were developed to improve the mechanical, esthetic, and bioactive properties of glass ionomer cement (GIC). This study was conducted to evaluate the solubility of RMGIC and E-RMGIC after immersion in acidic saliva (pH 3.5) for 1, 7, and 14 days.

Cylindrical specimens with a diameter of 15 mm and a thickness of 1 mm were prepared (ISO 4049: 2019). A total of 48 specimens (n=48) were divided into two groups based on the type of restorative material (I=RMGIC; II=E-RMGIC). Each group was further divided into three subgroups based on immersion time (A=1 day; B=7 days; C=14 days), resulting in six experimental groups (IA, IB, IC, IIA, IIB, IIC). Solubility values were determined by measuring the mass difference of the specimens before and after immersion in acidic saliva. The data were analyzed using two-way Anova and Tukey's Post Hoc test ($\alpha=0.05$).

The results showed that the type of restorative material significantly affected solubility ($p < 0.05$), immersion time significantly affected solubility ($p < 0.05$), while the interaction between the two variables was not significant ($p > 0.05$). Higher solubility was observed in RMGIC compared with E-RMGIC and solubility increased with longer immersion times.

Keywords: Solubility, Resin Modified Glass Ionomer Cement, Enhanced-Resin Modified Glass Ionomer Cement, Acidic Saliva, Immersion Time