

**KELARUTAN *RESIN MODIFIED GLASS IONOMER* DAN
ENHANCED RESIN MODIFIED GLASS IONOMER
DALAM SALIVA pH ASAM DENGAN LAMA
PERENDAMAN 14, 21, DAN 28 HARI**

INTISARI

Resin modified glass ionomer (RMGI) dan *enhanced resin modified glass ionomer* (ERMGI) merupakan bahan restorasi di kedokteran gigi yang terdiri atas perpaduan komponen kaca ionomer dan resin. Kedua bahan tersebut memiliki kemampuan melepaskan ion-ion untuk membantu proses remineralisasi gigi beriringan dengan proses kelarutan bahan. Penelitian ini bertujuan untuk mengetahui nilai kelarutan bahan restorasi RMGI dan ERMGI dalam saliva pH asam dengan lama perendaman 14, 21, dan 28 hari.

Penelitian eksperimental laboratoris ini menggunakan 48 spesimen berbentuk silinder dengan diameter 15 mm dan ketebalan 1 mm, yang terdiri dari subkelompok bahan, yaitu RMGI (I) dan ERMGI (II) serta subkelompok lama perendaman, yaitu 14 hari (A), 21 hari (B), dan 28 hari (C). Pengukuran nilai kelarutan dilakukan sesuai panduan ISO 4049:2019. Penimbangan massa spesimen sebelum dan sesudah perendaman dilakukan menggunakan timbangan analitik dengan ketelitian 0,1 mg. Data penelitian diolah melalui tahapan uji normalitas Shapiro Wilk, uji homogenitas Levene, uji statistik Anava dua jalur, dan diakhiri uji *Post-hoc Tukey* dengan seluruh uji menggunakan tingkat kepercayaan 95%.

Hasil uji statistik Anava dua jalur menunjukkan bahwa terdapat pengaruh jenis bahan restorasi dan lama perendaman terhadap kelarutan ($p < 0,05$), namun tidak terdapat interaksi antara jenis bahan restorasi dengan lama perendaman terhadap kelarutan ($p > 0,05$). Kesimpulan penelitian ini adalah kelarutan RMGI lebih tinggi dibandingkan dengan bahan ERMGI. Kelarutan kedua bahan restorasi didapatkan semakin meningkat pada perendaman yang lebih lama.

Kata kunci: *resin-modified glass ionomer, enhanced resin-modified resin-modified glass ionomer*, kelarutan, saliva asam, perendaman

**SOLUBILITY OF RESIN MODIFIED GLASS IONOMER
AND ENHANCED RESIN MODIFIED GLASS
IONOMER IN ACIDIC SALIVARY AT
IMMERSION PERIODS OF
14, 21, AND 28 DAYS**

ABSTRACT

Resin-modified glass ionomer (RMGI) and enhanced resin-modified glass ionomer (ERMGI) are restorative materials in dentistry that are a blend of glass ionomer and resin components. Both of these materials have the ability to release ions to help with the process of tooth remineralization alongside the material's solubility process. This study aims to determine the solubility values of RMGI and ERMGI restorative materials in acidic saliva at immersion periods of 14, 21, and 28 days.

This laboratory experimental study used 48 cylindrical specimens with a diameter of 15 mm and a thickness of 1 mm, consisting of material subgroups, namely RMGI (I) and ERMGI (II), and immersion time subgroups, namely 14 days (A), 21 days (B), and 28 days (C). The solubility value measurement was performed according to ISO 4049:2019 guidelines. The mass of the specimen was weighed before and after immersion using an analytical balance with an accuracy of 0.1 mg. The research data were processed thru the Shapiro-Wilk normality test, Levene's homogeneity test, two-way ANOVA statistical test, and concluded with the Tukey Post-hoc test with 95% confidence level.

The results of the two-way ANOVA statistical test showed that there was an effect of the type of restorative material and immersion time on solubility ($p < 0.05$), but there was no interaction between the type of restorative material and immersion period on solubility ($p > 0.05$). The conclusion of this study is that the solubility of RMGI is higher compared to ERMGI material. The solubility of both restorative materials was found to increase with longer immersion periods.

Keywords: resin-modified glass ionomer, enhanced resin-modified glass ionomer, solubility, acidic salivary, immersion