WAKTU PERENDAMAN LARUTAN ASAM ASETAT TERHADAP KELARUTAN *RESIN MODIFIED GLASS IONOMER CEMENT*

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ABSTRAK

Pendahuluan: Restorasi merupakan perawatan untuk gigi berlubang. Ketahanan bahan restorasi terhadap larutan asam mempengaruhi sifat fisik dari bahan tumpatan tersebut. Larutan asam asetat 1% merupakan batas aman penggunaan larutan asam asetat agar tidak menyebabkan kerusakan yang berlebihan pada enamel. Asam asetat dapat digunakan sebagai bahan penyedap rasa dan bahan pengawet pada makanan. Tujuan penelitian ini yaitu untuk mengetahui pengaruh waktu perendaman dalam larutan asam asetat 1% terhadap kelarutan bahan tumpatan *resin modified glass ionomer cement.* **Metode**: Jenis penelitian *posttest only with control group design* dengan jumlah sampel 48 plat RMGIC yang dibentuk silindris dengan diameter 10 mm dan ketebalan 2 mm. Sampel dibagi menjadi 24 sampel kelompok kontrol yang direndam dalam saliva buatan dan 24 sampel kelompok perlakuan yang direndam dalam larutan asam asetat 1%. Masing-masing kelompok dibagi menjadi empat kelompok berdasarkan waktu perendamannya yaitu 5, 10, 15 dan 20 menit. Kelarutan dihitung dengan menggunakan rumus $S= (m^0-m^1)/V$. Data hasil penelitian dianalisis menggunakan *Kruskal-Wallis*. **Hasil**: Hasil uji *Kruskal-Wallis* menunjukan nilai p= 0,000 (p<0,05), artinya terdapat pengaruh waktu perendaman dalam larutan asam asetat terhadap kelarutan bahan tumpatan *resin modified glass ionomer cement*. **Simpulan**: Semakin lama waktu perendaman bahan *resin modified glass ionomer cement* dalam larutan asam asetat 1%, maka semakin banyak matriks RMGIC yang larut.

Kata Kunci: kelarutan, RMGIC, asam asetat, waktu perendaman

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SUBMERSION TIME OF ACETIC ACID TO THE SOLUBILITY OF RESIN MODIFIED GLASS IONOMER CEMENT

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ABSTRACT

Background: Restoration is a treatment for dental caries. The resistance of the restorative material to the acid solution influence the physical properties of restorative material. 1% Acetic acid solution is a safe limit for the usage of acetic acid solution so that didn't causes an excessive damage to enamel. Acetic acid could be used as a seasoning and a preservative material. The aim of this research is to find out the effect of submersion time in the 1% acetic acid solution to the solubility of resin modified glass ionomer cement. **Metode**: This research used a posttest only with control group design. 48 RMGIC plates was used in this research. The plates was formed in cylindrical shape with the diameter of plates was 10 mms and the thickness of plates was 2 mms. The samples was divided into 2 groups. The first group was a control group that contain 24 plates of RMGIC and immersed with an artificial saliva. The second group was a treatment group that contain 24 samples and immersed with 1% acetic acid solution. Each groups was divided into 4 subgroups based on the submersion times that was 5, 10, 15 and 20 minutes. The solubility was calculated using a formula $S= (m^0-m^1)/V$. The data results were analysed using Kruskall-Wallis. **Results**: The results of Kruskall-Wallis test was showed that the P-value= 0,000 (P<0,05), it means that there was an effectof submersion time in the acetic acid solution to the solubility of restorative material resin modified glass ionomer cement. **Conclusion**: The longer submersion time of resin modified glass ionomer cement material in the1% acetic acid, then the more RMGIC's matrix was solved.

Key words: solubility, RMGIC, acetic acid, submersion time

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