

INTISARI

Gypsum tipe III merupakan tipe yang paling sering digunakan sebagai material pembuatan model kerja baik untuk pembuatan protesa maupun pembuatan alat ortodonti. Salah satu pencegahan infeksi adalah dengan mencampurkan larutan disinfektan. *Povidon iodine* merupakan salah satu disinfektan yang sering digunakan. Tujuan penelitian adalah untuk mengetahui adanya pengaruh pencampuran larutan *povidoniodine* terhadap *setting time* gypsum tipe III.

Penelitian menggunakan gypsum tipe III, *povidon iodine* dan akuades. Cetakan berupa *metal rings* dengan diameter 3,5 cm dan tebal 2 cm. Subjek penelitian berjumlah 16 sampel terbagi menjadi 4 kelompok yaitu kelompok dengan penambahan *povidon iodine* 0%, 1%, 5%, dan 10%. Pengukuran *setting time* dilakukan menggunakan jarum *Gilmore* dengan cara mengukur *initial setting* dengan ukuran jarum 2,12 mm dan pemberat 113,4 gr serta *final setting* dengan ukuran jarum 1,06 mm dan pemberat 453,6 gr. Data yang diperoleh dianalisis menggunakan pengujian statistik ANAVA satu jalur dan *post-hoc least significant difference* (LSD) 0,05.

Hasil dari penelitian menunjukkan rerata *setting time* gypsum tipe III yang dicampur dengan *povidon iodine* dalam berbagai konsentrasi (0-10%) secara berurutan yaitu: $8,17 \pm 0,110$ (0%); $9,09 \pm 0,048$ (1%), $12,17 \pm 0,365$ (5%); $23,94 \pm 0,286$ (10%) menit. Hasil uji ANAVA satu jalur menunjukkan adanya pengaruh variasi konsentrasi *povidon iodine* terhadap *setting time* gypsum tipe III ($p < 0,05$). Hasil uji *least significant difference* (LSD) menunjukkan variasi konsentrasi *povidon iodine* memiliki perbedaan rerata antar kelompok perlakuan terhadap *setting time* yang bermakna terhadap gypsum tipe III. Kesimpulan penelitian ini adalah variasi konsentrasi *povidon iodine* mempengaruhi *setting time* gypsum tipe III.

Kata Kunci: Gypsum tipe III, *Povidon iodine*, *Setting time*

ABSTRACT

Type III gypsum is the type that is most often used as a material for making working models for both the manufacture of prostheses and the manufacture of orthodontic appliances. One way to prevent infection is to mix a disinfectant solution. Povidone-iodine is one of the most used disinfectants. The purpose of this study was to determine the effect of mixing povidone-iodine solution on the setting time of type III gypsum.

The study used gypsum type III, povidone-iodine and distilled water. The impression is in the form of metal rings with a diameter of 3.5 cm and a thickness of 2 cm. The research subjects were 16 samples divided into 4 groups, namely the group with the addition of 0%, 1%, 5%, and 10% povidone iodine. Measurement of setting time was carried out using a Gilmore needle by measuring the initial setting with a needle size of 2.12mm with a weight of 113.4 gr and the final setting with a needle size of 1.06 mm with a weight of 453.6 gr. The data obtained were analyzed using the one-way ANOVA and the post-hoc least significant difference (LSD).

The results showed the mean setting time of type III gypsum mixed with povidone-iodine in various concentrations, (0-10%) respectively: 8.17 ± 0.110 (0%); 9.09 ± 0.048 (1%); 12.17 ± 0.365 (5%); 23.94 ± 0.286 (10%) minute. The results of the one-way ANOVA test showed that there was an effect of variations in the concentration of povidone-iodine on the setting time of type III gypsum ($p < 0.05$). The results of the least significant difference (LSD) test showed that the variation in the concentration of povidone-iodine had a significant difference in the mean between setting time against gypsum type III. The conclusion of this study is that the variation of povidone-iodine concentration affects the setting time of type III gypsum.

Keywords: Type III gypsum, povidone-iodine, setting time