

## INTISARI

Alginat sebagai bahan material cetak dapat menyebabkan terjadinya kontaminasi silang dari dokter ke pasien. Kontaminasi silang dapat dicegah dengan melakukan disinfeksi hasil cetakan alginat. Disinfeksi dilakukan dengan metode penyemprotan dan perendaman. Alginat memiliki sifat hidrofilik sehingga sangat mudah bereaksi dengan larutan. Reaksi dapat berupa imbibisi yaitu penyerapan cairan berlebih ataupun sineresis yang menyebabkan air keluar dari alginat dan terjadi penyusutan. Tujuan dari penelitian ini adalah meneliti beda pengaruh metode disinfeksi penyemprotan dan perendaman dengan bahan *chloroxylenol 5%* terhadap stabilitas dimensi material cetak alginat.

Penelitian ini menggunakan alginat (Aroma, Jepang), *chloroxylenol 5%* (Dettol, Indonesia), *mastercast* berbentuk balok dengan ukuran panjang 3 cm x lebar 3 cm x tinggi 2 cm, dan sendok cetak individual berukuran panjang 6 cm x lebar 6 cm x tinggi 4 cm. Subyek penelitian alginat dibuat dengan pencampuran akuades dan serbuk alginat (w/p = 120 ml/50,4 g) kemudian dicetak dengan *mastercast*. Subyek penelitian berjumlah 30 sampel dengan 10 sampel diberi perlakuan disinfeksi penyemprotan, 10 sampel dengan perlakuan disinfeksi perendaman, dan 10 sampel sebagai kontrol tanpa perlakuan. Perlakuan dilakukan selama 10 menit dengan larutan disinfektan *chloroxylenol 5%*. Sampel cetakan alginat kemudian diisi dengan *gips stone* (w/p = 27 ml/100 g). *Gips stone* yang sudah *setting* diukur menggunakan jangka sorong dengan ketelitian 0,05 mm kemudian dihitung volumenya. Perubahan dimensi diukur dengan cara pengurangan volume perlakuan dengan volume kontrol.

Rerata perubahan dimensi volume hasil cetakan alginat dengan teknik disinfeksi perendaman (251,52 mm<sup>3</sup>) lebih besar dari teknik penyemprotan (245,03 mm<sup>3</sup>). Hasil uji *independent t-test* menunjukkan tidak terdapat perbedaan stabilitas dimensi hasil cetakan alginat yang bermakna antara disinfeksi dengan cara penyemprotan dan perendaman ( $p > 0,05$ ). Persentase perubahan dimensi hasil cetakan alginat metode penyemprotan (0,0137%) dan metode perendaman (0,0140%) menunjukkan perubahan dimensi masih dalam batas toleransi ANSI/ADA no 18. Kesimpulan dari penelitian ini adalah tidak terdapat perbedaan stabilitas dimensi yang signifikan antara material cetak alginat yang didisinfeksi menggunakan larutan disinfektan *chloroxylenol 5%* dengan cara penyemprotan dan perendaman.

Kata kunci: alginat, *chloroxylenol 5%*, stabilitas dimensi, cara disinfeksi.

## ***ABSTRACT***

Alginate as an impression material can cause cross-contamination from doctor to patient. Cross contamination can be prevented by disinfecting the alginate impressions. Disinfection is carried out by spraying and immersion methods. Alginate has hydrophilic properties so it is very easy to react with solutions. The reaction can be in the form of imbibition, namely the absorption of excess liquid or syneresis which causes water to come out of the alginate and shrinkage occurs. The purpose of this study was to examine the different effects of the spraying and immersion disinfection method with 5% chloroxylenol on the dimensional stability of the alginate impression material.

This study used alginate (Aroma, Japan), chloroxylenol 5% (Dettol, Indonesia), a cuboid mastercast with a length of 3 cm x width 3 cm x height 2 cm, and individual impression tray measuring 6 cm length x 6 cm width x height 4 cm. The research subjects were alginate made by mixing distilled water and alginate powder (w/p = 120 ml/50.4 g) and then printed with mastercast. The research subjects were 30 samples with 10 samples treated with spraying disinfection, 10 samples with immersion disinfection treatment, and 10 samples as controls without treatment. The treatment was carried out for 10 minutes with 5% chloroxylenol disinfectant solution. Alginate impressions sample was then filled with gypsum stone (w/p = 27 ml/100 g). The cast stone that has been set is measured using a caliper with an accuracy of 0.05 mm and then the volume is calculated. The dimensional changes were measured by reducing the treatment volume with the control volume.

The average changes in volume dimensions of alginate impressions with the immersion disinfection technique (251.52 mm<sup>3</sup>) is greater than the spraying technique (245.03 mm<sup>3</sup>). The results of the independent t-test showed that there was no significant difference in the dimensional stability of alginate impressions between disinfection by spraying and immersion ( $p > 0.05$ ). The percentage changes in the dimensions of the alginate impressions by the spraying method (0.0137%) and the immersion method (0.0140%) showed that the dimensional changes were still within the tolerance limit of ANSI/ADA no 18. It was concluded that there were no significant difference in dimensional stability between alginate impression materials that were disinfected using a 5% chloroxylenol disinfectant solution by spraying and immersing.

**Keywords:** alginate, chloroxylenol 5%, dimensional stability, disinfection method