ABSTRACT

Polyvinyl siloxane is used for taking impression in dental clinics are commonly contaminated with patient's saliva and blood caused cross contamination. The immersion method is the recommended method for disinfection of Polyvinyl Siloxane impressions. This makes it easier to change dimensions when immersed with a disinfectant solution causing the impression material absorb the disinfectant solution. This study aims to determine the effect of immersion duration in 5% chloroxylenol disinfection solution on the dimensional stability of Polyvinyl Siloxane impression.

The study used Polyvinyl Siloxane (Light Bodied), 5% chloroxylenol (Dettol), and a master cast in the form of a block measuring 30 mm length, 30 mm width, and 20 mm height. The research subjects were made by using a mixing gun to mix the catalyst then the impression was taken on the master cast. The research subjects were 16 samples divided into 3 treatment groups of immersion in 5% chloroxylenol disinfectant solution, namely immersion for 5 minutes, 10 minutes, 20 minutes and 1 control group, 0 minutes. Next, the Polyvinyl Siloxane is filled with dental stone. The dental stone impression was measured in dimensions (length, width, height) with a manual callipers with an accuracy of 0.05 mm and then the volume was calculated. The data obtained were carried out by one-way ANOVA statistical testing then followed by post hoc test.

The result showed that the mean and standard deviation changes in the dimensions of the polyvinyl siloxane impressions immersed in 5% chloroxylenol disinfectant solution were 29.92 ± 12.20 mm^3 (5 minutes), 59.78 ± 17.25 mm^3 (10 minutes), 82.17 ± 14.91 mm^3 (20 minutes). One way ANOVA test result showed $p<0.05$. The conclusion of this study was that the immersion duration in 5% chloroxylenol disinfectant solution affected on the dimensional stability of the Polyvinyl Siloxane impression.

Keywords: immersion time, 5% chloroxylenol, Polyvinyl Siloxane(Light bodied), dimensional stability

INTISARI

Polivinil siloksan digunakan sebagai material cetak di klinik gigi. Material cetak umumnya dapat terkontaminasi dengan air liur pasien dan darah yang menyebabkan kontaminasi silang. Metode perendaman adalah metode yang direkomendasikan untuk desinfeksi cetakan Polivinil Siloksan. Hal ini memudahkan perubahan dimensi saat direndam dengan larutan desinfektan yang membuat bahan cetak menyerap larutan desinfektan karena. Penelitian ini bertujuan untuk mengetahui pengaruh durasi perendaman dalam larutan desinfektan *chloroxylenol 5%* terhadap stabilitas dimensi material cetak Polyvinyl Siloxane.

Penelitian menggunakan *Polyvinyl Siloxane (Light Bodied), 5% chloroxylenol* (Dettol), dan *master cast* berupa balok berukuran panjang 30 mm, lebar 30 mm, dan tinggi 20 mm. Subyek penelitian dibuat dengan menggunakan *mixing gun* untuk mencampur katalis kemudian dicetak pada master cast. Subyek penelitian sebanyak 16 sampel yang terbagi menjadi 3 kelompok perlakuan perendaman dalam larutan desinfektan *chloroxylenol 5%* yaitu perendaman selama 5 menit, 10 menit, 20 menit dan 1 kelompok kontrol, 0 menit. Selanjutnya *Polyvinyl Siloxane* diisi dengan *dental stone.* Cetakan *dental stone* diukur dimensinya (panjang, lebar, tinggi) dengan kaliper analog dengan ketelitian 0,05 mm kemudian dihitung volumenya. Data yang diperoleh dilakukan dengan uji statistik ANOVA satu jalur dilanjutkan denggan Post hoc test.

Hasil penelitian menunjukkan bahwa perubahan dimensi cetakan polivinil siloksan yang direndam dalam larutan desinfektan *chloroxylenol* 5% adalah 29,92 ± 12,20 mm^3 (5 menit), 59,78 ± 17,25 mm^3 (10 menit), 84.42 ± 17.80 mm^3 (20 menit). Hasil uji ANOVA satu jalur menunjukkan $p<0,05$. Kesimpulan dari penelitian ini adalah lama perendaman dalam larutan desinfektan kloroksilenol 5% berpengaruh terhadap stabilitas dimensi cetakan Polivinil Siloksan.

Kata kunci: lama perendaman, *chloroxylenol* 5%, Polivinil Siloksan (*Lightbodied),* stabilitas dimensi