

ABSTRAK

Badriyah. 2016. **Pengaruh Perendaman Lempeng Akrilik *Heat Cured* Dengan Penambahan Serat Kaca 3% Dalam Larutan Peroksida Alkali Terhadap Kekuatan Transversal (Studi In Vitro)**. Tugas Akhir, Program Studi Pendidikan Dokter Gigi Fakultas Kedokteran Universitas Brawijaya. Pembimbing: (1) Kartika Andari Wulan, drg. Sp.Pros. (2) Citra Insany Irgananda, drg. MMed.Ed.

Resin akrilik (*polymethylmetacrylate*) merupakan basis gigi tiruan yang paling banyak digunakan dalam kedokteran gigi. Keuntungan resin akrilik jenis *heat cured* adalah relatif mudah pembuatannya, tidak bersifat toksik, harga terjangkau dan estetik. Sedangkan kekurangan resin akrilik *heat cured* antara lain mudah patah. Penambahan *fiber* dalam resin akrilik *heat cured* yaitu serat kaca merupakan salah satu upaya dalam mencegah fraktur dan meningkatkan kekuatan basis gigi tiruan. Penambahan glass fiber dengan konsentrasi 3% dapat meningkatkan kekuatan transversa resin akrilik secara optimal.

Tablet pembersih gigi tiruan merupakan perawatan alternatif gigi tiruan dengan cara merendam di dalam larutan *effervescent*. Sampai saat ini belum ada data mengenai pengaruh tablet pembersih gigi tiruan terhadap kekuatan transversa lempeng akrilik. Penelitian ini dimaksudkan untuk mengetahui efek perendaman lempeng resin akrilik *heat cured* yang ditambah serat kaca 3% kedalam larutan pembersih alkali peroksida terhadap kekuatan transversal. Sampel berukuran 65 x 10 x 2,5 mm berjumlah 20 lempeng, dibagi dalam 6 kelompok perlakuan. Masing-masing kelompok terdiri dari 4 sampel, yang rentang perendamannya selama 1 hari 6 jam 25 menit, 2 hari 12 jam 50 menit, 3 hari 19 jam 15 menit yang di konversikan dalam 1 tahun, 2 tahun dan 3 tahun. Kekuatan transversa diukur menggunakan *Universal Testing Machine* merk *Tarnogrocki Wilhem Herm Holm*. . Data hasil penelitian dianalisis dengan uji *One way ANOVA*. Berdasarkan hasil uji statistik Anova, diperoleh nilai $\alpha > 0.507$ ($\alpha > 0,05$). sehingga dapat disimpulkan tidak terdapat perbedaan yang signifikan dari lama perendaman lempeng akrilik *heat cured* serat kaca 3% dalam larutan peroksida alkali dengan aquadest sebagai kelompok kontrol terhadap kekuatan transversa.

Kata Kunci: Resin Akrilik *Heat Cured* , serat kaca 3%, alkali peroksida, kekuatan transversal

ABSTRACT

Badriyah, 2016. **Effect of Heat Cured Acrylic Resin Reinforced with 3% of Glass Fiber Immersion in Alkaline Peroxide towards Transverse Strength.** Final Assignment, School of Dentistry, Medical Faculty of Brawijaya University. Supervisors : (1) Kartika Andari Wulan, drg. Sp.Pros. (2) Citra Insany Irgananda, drg. MMed.Ed.

Heat cured acrylic resin (*polymethylmetacrylate*) was a denture base that mostly used in dentistry. The advantages of this resin were easy to made, non-toxic, cheap, and good esthetic. One of the disadvantage of heat cured acrylic resin was easy to break. Glass fiber that reinforced into heat cured acrylic resin was an effort to prevent fracture and to increase the strength of heat cured acrylic resin. Reinforcement using 3% of glass fiber can optimally increased the transverse strength of acrylic resin. Denture cleansing tablet was an alternative treatment of denture base that can be applied with the immersion in the effervescent liquid for 5 minutes. Until now there was no data about the effect of denture cleansing tablet with the transverse strength of acrylic plate. The purpose of this study was to understand the effect of heat cured acrylic resin reinforced with 3% of glass fiber immersion in alkaline peroxide towards the transverse strength. Samples were 20 heat cured acrylic resin with 65 mm x 10mm x 2,5 in size that divided into 6 treatment group. Each group consisted of 4 samples with the length of immersion were 1day 6h 25min, 2 day 12h 50min, 3day 19h 15min that converted as 1 year, 2 years, and 3 years of used. Transverse strength was measured using Tarnogrocki Wilhem Herm Holm Universal Testing Machine. The result of this study was analyzed with oneway ANOVA. According to oneway ANOVA statistic result, the value of α was 0.507 ($\alpha > 0,05$) so it can be concluded that there was no significantly different from the length of heat cured acrylic resin reinforced with 3% of glass fiber immersion in alkaline peroxide with aquadest as a control towards the transverse strength.

Keywords: *Heat cured acrylic resin*, 3% glass fiber , Alkaline Peroxide , Transversal strength