

ABSTRAK

Atikasari, Nurani. 2016. Pengaruh Suhu *Microwave* Terhadap Kekuatan Impak Resin Akrilik *Heat Cured*.

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Resin akrilik *heat cured* sebagai bahan paling umum untuk pembuatan basis gigi tiruan memiliki beberapa keunggulan, diantaranya biokompatibilitas terhadap jaringan rongga mulut dan nilai estetis yang baik, mudah untuk diproses, tidak mengiritasi, tidak toksik, tidak memiliki bau dan rasa, stabilitas warna baik, murah dan mudah didapat. Permasalahan pada hasil akhir pembuatan basis gigi tiruan mudah patah (kekuatan impaknya perlu ditingkatkan). Penelitian sebelumnya, peningkatan suhu saat pembuatan resin akrilik dapat mempengaruhi kekuatan mekanik dari resin akrilik. Keunggulan *curing* menggunakan *microwave* adalah polimerisasi akrilik lebih cepat daripada menggunakan air mendidih. Tujuan penelitian untuk mengetahui pengaruh suhu *microwave* terhadap kekuatan impak resin akrilik *heat cured*. Penelitian *post-test only control group design* dengan sampel sejumlah 25 lempeng plat resin akrilik berukuran 65 mm x 10mm x 2,5 mm terbagi dalam 5 kelompok:, yaitu kelompok kontrol yang dicuring pada suhu konvensional 70°C, 4 kelompok perlakuan di *curing* pada suhu 40°C, 60°C, 80°C, dan 100°C. Hasil penelitian mendapatkan rata-rata kekuatan impak kelompok kontrol $0,0161 \text{ J/mm}^2$, dan 4 kelompok perlakuan $0,0297 \text{ J/mm}^2$, $0,0181 \text{ J/mm}^2$; $0,0201 \text{ J/mm}^2$ dan $0,0277 \text{ J/mm}^2$ dengan menggunakan uji korelasi regresi Pearson didapatkan signifikansi = 0,771 ($p>0,05$). Kesimpulan tidak terdapat pengaruh suhu *microwave* terhadap kekuatan impak resin akrilik *heat cured*. Kekuatan impak paling besar pada suhu 40°C. Suhu paling optimum pada suhu 100 °C karena pada suhu 100°C ikatan yang terbentuk lebih stabil.

Kata kunci : resin akrilik *heat cured*, suhu *microwave*, kekuatan impak

ABSTRACT

Atikasari, Nurani. 2016. **Effect of Temperature Microwave Against Impact Strength Heat Cured Acrylic Resin.** Final Assignment, School of Dentistry, Medical Faculty of Brawijaya University. Supervisors : (1) drg. Diwya Nugrahini, Sp.Pros (2) drg. Citra Insany Irgananda., MMed.Ed

Heat cured acrylic resin as the most common material used for the manufacture of denture base, has several advantages, which have good biocompatibility to oral tissues and aesthetic value, is easy to process, not irritating, non-toxic, no smell and taste, good color stability, inexpensive and accessible. Problems often arise in the final result denture base is easily broken (impact strength must be arise). A previous study, the increase in temperature when the manufacture of acrylic resins can affect the mechanical strength of acrylic resin. The advantages curing using microwaves is the speed of the polymerization of acrylic faster than using boiling water. The purpose of this study was to determine the effect of temperature impact strength microwave to heat cured acrylic resin. The post-test only control group design research with 25 pieces sample in the form of acrylic resin plate with each size of 65 mm x 10 mm x 2.5 mm. The samples were divided into five groups. The control group which curing at the conventional temperature 70°C, 4 treatment groups curing at 40°C, 60°C, 80°C, and 100°C. Results of the study, the avarage impact strength of control group was $0,0161 \text{ J/mm}^2$, 4 treatment groups were $0,0297 \text{ J/mm}^2$; $0,0181 \text{ J/mm}^2$; $0,0201 \text{ J/mm}^2$ and $0,0277 \text{ J/mm}^2$. Using Pearson's regression correlation test the significancy is 0,771 ($p > 0,05$). The conclusion of this study is no effect of temperature microwave to impact strength of heat cured acrylic resin. The greatest impact strength at a temperature of 40°C. The optimum temperature at 100 ° C for at temperatures of 100°C to form more stable bonds.

Keywords : heat cured acrylic resin, temperature microwave, impact strength

