ABSTRACT

Transverse strength is the resistance of the denture base to loads, pressures, and thrust when the mouth is functioning. The transverse strength of the denture base is influenced by several chemicals (solvents) such as those contained in foods, beverages and denture cleaning agents. The results of previous studies showed that basil leaves have been tested as a disinfectant for dentures. The purpose of this study was to determine the effect of soaking with basil leaf extract on the transverse strength of heat polymerized acrylic resin (RAPP). The experimental design of this study was Post Test Only Control Group Design with a total of n = 24 and consisted of 4 groups, the samples were immersed in sterile distilled water for 24 hours. Then soaked in a solution of basil leaf extract with concentrations of 25%, 50%, and 75%, sterile distilled water, with an immersion time of 8 days. The transverse strength was measured using a universal testing machine. The results showed that the mean transverse strength of RAPP immersion in 25% basil leaf extract was 49.23 ± 9.59, immersion in 50% basil leaf extract 37.118 ± 5.55, immersion in 75% basil leaf extract 38.04 ± 3, 08, as well as immersion in distilled water as a control group 46.26 ± 8.84, showed that the data were normally distributed and homogeneous. Data analysis with One Way ANOVA test showed $p<0.05$, which means significantly different. The LSD test at concentrations of 25% and 50% showed a significance of $p<0.05$, the concentration of 50% and the control group showed a significance of $p<0.05$. From the results of this study, it was concluded that basil leaf extract had the effect of reducing the transverse strength of heat polymerized acrylic resin.

Keywords : Heat polymerized acrylic resin, Basil leaf extract, Transverse strength

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ABSTRAK

Kekuatan transversa adalah ketahanan basis gigi tiruan terhadap beban, tekanan, dan gaya dorong sewaktu mulut berfungsi. Kekuatan transversa pada basis gigi tiruan dipengaruhi oleh beberapa zat kimia (pelarut) seperti yang terkandung di dalam makanan, minuman dan bahan pembersih gigi tiruan. Hasil penelitian sebelumnya menunjukkan bahwa daun kemangi sudah teruji sebagai bahan desinfektan dari gigi tiruan. Tujuan penelitian ini adalah untuk mengetahui pengaruh perendaman dengan ekstrak daun kemangi terhadap kekuatan transversa resin akrilik polimerisasi panas (RAPP). Rancangan eksperimental penelitian ini adalah *Post Test Only Control Group Design* dengan jumlah n = 24 dan terdiri dari 4 kelompok, sampel direndam aquades steril selama 24 jam. Selanjutnya direndam dalam larutan ekstrak daun kemangi konsentrasi 25%, 50%, dan 75%, aquades steril, dengan waktu perendaman 8 hari. Kekuatan transversa diukur menggunakan *universal testing machine*. Hasil perhitungan menunjukkan rerata kekuatan transversa RAPP perendaman dalam ekstrak daun kemangi konsentrasi 25% yaitu 49,23 ± 9,59, perendaman dalam ekstrak daun kemangi 50% 37,118 ± 5,55, perendaman dalam ekstrak daun kemangi 75% 38,04 ± 3,08, serta perendaman dalam aquades sebagai kelompok kontrol 46,26 ± 8,84, menunjukkan data terdistribusi normal dan homogen. Analisis data dengan uji *One Way ANOVA* menunjukkan $p<0,05$ berarti berbeda signifikan. Uji LSD konsentrasi 25% dan 50% menunjukkan signifikansi $p<0,05$, konsentrasi 50% dan kelompok kontrol menunjukkan signifikansi $p<0,05$. Dari hasil penelitian ini, disimpulkan ekstrak daun kemangi memberikan efek menurunkan kekuatan transversa resin akrilik polimerisasi panas.

Kata kunci : Resin akrilik polimerisasi panas, Ekstrak daun kemangi, Kekuatan transversa

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