

INTISARI

Resin akrilik polimerisasi panas merupakan bahan basis gigi tiruan yang masih sering digunakan, bahan ini menghasilkan monomer sisa pada reaksi polimerisasinya. Cangkang kerang darah (*Anadara granosa*) merupakan limbah dengan kandungan kalsium yang dapat digunakan sebagai bahan sintesis hidroksiapatit. Hidroksiapatit dapat mengurangi kadar monomer sisa. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan serbuk sintesis hidroksiapatit cangkang kerang darah terhadap kadar monomer sisa resin akrilik polimerisasi panas.

Penelitian ini menggunakan spesimen resin akrilik polimerisasi panas berbentuk silinder dengan diameter 10 mm dan ketebalan 2 mm sebanyak 12 buah. Spesimen dibagi ke dalam 3 kelompok perlakuan, yaitu kelompok resin akrilik tanpa penambahan sintesis hidroksiapatit cangkang kerang darah, kelompok resin akrilik penambahan 2%, dan kelompok resin akrilik penambahan 5% sintesis hidroksiapatit cangkang kerang darah. Kadar monomer sisa dianalisis dengan *gas chromatography*. Data dianalisis dengan uji ANAVA satu jalur.

Rerata kadar monomer sisa meningkat pada kelompok dengan penambahan 2% dan 5% sintesis hidroksiapatit cangkang kerang darah. Analisis data uji ANAVA satu jalur menunjukkan terdapat perbedaan yang signifikan kadar monomer sisa antar kelompok perlakuan ($p < 0,05$) dan uji *Post Hoc* LSD menunjukkan perbedaan kadar monomer sisa yang signifikan ($p < 0,05$) antara kelompok tanpa penambahan terhadap kelompok penambahan 2% dan penambahan 5%. Kesimpulan dari penelitian ini adalah penambahan sintesis hidroksiapatit cangkang kerang darah meningkatkan kadar monomer sisa resin akrilik polimerisasi panas.

Kata kunci : Resin akrilik polimerisasi panas, hidroksiapatit, cangkang kerang darah, kadar monomer sisa.

ABSTRACT

Heat cured acrylic resin is the commonly used as denture base material, but it produces residual monomer as the side products on the polymerization reaction. The shells of kerang darah (*Anadara granosa*) are wastes that contain high carbonate mineral which able to use as hydroxyapatite synthesized sources. Hydroxyapatite may decrease the residual monomer. The objective of this study to identify the hydroxyapatite synthesized addition to acrylic resin deal with the amount of residual monomer.

Twelve cylindrical with 10 millimeters in diameter and 2 millimeters in thick heat cured acrylic resin specimens were used in this study. The specimens were divided into three groups. The first group was acrylic resin without addition of hydroxyapatite synthesized, the second group was acrylic resin added with 2% of hydroxyapatite synthesized and the third group was acrylic resin was added with 5% of hydroxyapatite synthesized. The preparation of the specimens carried out and the residual monomer was analyzed by gas chromatography. The data was analyzed by one-way ANOVA.

The mean of residual monomer increased in the groups of acrylic resin with the 2% and 5% addition of hydroxyapatite synthesized. The data was analyzed with one-way ANOVA showed the significant difference of residual monomer between groups ($p < 0.05$), Post Hoc LSD analysis showed a significant difference between the group without addition of hydroxyapatite with both the 2%-addition group and the 5%-addition group ($p < 0.05$). The conclusion of this study was the addition of kerang darah shell hydroxyapatite synthesized powder increased the amount of residual monomer in the heat cured acrylic resin.

Key words : heat cured acrylic resin, hydroxyapatite, kerang darah shell,
residual monomer