

INTISARI

Resin akrilik merupakan material yang biasa digunakan sebagai basis gigi tiruan yang tersusun atas matriks polimetilmetakrilat yang dapat mengalami kelelahan bahan saat digunakan terus menerus akibat tekanan oklusal. Penambahan *polyethylene fiber* dapat menambah kekuatan fisik resin akrilik. Gigi tiruan akan berkontak dengan saliva yang mempunyai pH yang berubah-ubah, salah satunya suasana asam. Tujuan dari penelitian ini adalah mengetahui pengaruh pH rendah terhadap kekuatan transversa resin akrilik dengan penambahan *polyethylene fiber*.

Bahan penelitian ini adalah resin akrilik polimerisasi panas dan *polyethylene fiber*, serta larutan saliva buatan. Sampel penelitian berupa resin akrilik polimerisasi panas dengan penambahan *polyethylene fiber* berbentuk plat dengan ukuran 65x10x2,5 mm. Sampel berjumlah 24 buah kemudian dibagi menjadi 4 kelompok yaitu pH 2,5; 4,5; 5,5 dan 6,5. Sampel direndam di dalam saliva buatan selama 14 hari dengan suhu 37°C. Kekuatan transversa diukur menggunakan *universal testing machine*. Data kekuatan transversa dianalisis secara statistik menggunakan ANAVA satu jalur dan *LSD*

Hasil penelitian menunjukkan pH asam mempunyai pengaruh yang bermakna terhadap kekuatan transversa resin akrilik dengan penambahan *polyethylene fiber* ($p < 0,05$). Kesimpulan dari penelitian ini adalah pH rendah berpengaruh menurunkan kekuatan transversa resin akrilik dengan penambahan *polyethylene fiber*.

Kata kunci: Resin akrilik, *polyethylene fiber*, pH rendah, kekuatan transversa.

ABSTRACT

Resin acrylic was common material used in denture base plate that consist of polymethacrylate matrix that could get stressed by masticatory force periodically. Polyethylene fiber could be added to enhance acrylic resin physical properties. Contact with saliva cannot be avoided with the use of denture, and saliva's pH always changed, sometimes become acidic. The purpose of this study was to know if there was influence of low pH with transverse strength reduction in polyethylene fiber reinforced acrylic resin.

The method and material used in this study were heat cured acrylic resin, polyethylene fiber and artificial saliva. The sample used in this study was fiber reinforced acrylic resin plate 65 x 10 x 2.5 mm. There were 24 samples divided into 4 groups of pH that consisted of 2.5;4.5;5.5; and 6.5. Samples were immersed in artificial saliva for 14 days with temperature of 37 celcius degree. Tranverse strength were tested with universal testing machine. The data were analyzed statistically with one way ANOVA and LSD.

The result of this study were the means of transverse strength of the samples shown that there were influence of low pH to transverse strength of polyethylene fiber reinforced acrylic resin ($p < 0,05$). The conclusion of this study shown that there was influence of low pH to reduction of transverse strength of polyethylene fiber reinforced acrylic resin.

Key words: acrylic resin, polyethylene fiber, acidic pH, transverse strength.