

## INTISARI

Resin akrilik *high impact* merupakan modifikasi resin akrilik dengan *butadiene styrene rubber* dan digunakan sebagai bahan basis gigi tiruan. Kelonggaran gigi tiruan dapat terjadi akibat resorpsi tulang alveolar dan atrofi mukosa yang dapat menyebabkan rasa sakit dan ketidaknyamanan. *Soft liner* dapat diaplikasikan pada permukaan basis gigi tiruan untuk memperbaiki retensi gigi tiruan. *Soft liner* merupakan polimer lunak yang dapat masuk ke area *undercut* untuk mencapai retensi gigi tiruan yang optimal serta sebagai bantalan lunak untuk mengatasi nyeri yang timbul akibat iritasi dan inflamasi jaringan lunak. Kekuatan fleksural adalah beban maksimal yang dapat diterima material sebelum patah. Penelitian ini bertujuan untuk mengetahui pengaruh *silicone soft liner* terhadap kekuatan fleksural basis gigi tiruan resin akrilik *high impact*.

Penelitian menggunakan 32 plat resin akrilik *high impact* berbentuk balok (65 x 10 x 2 mm). Kelompok I terdiri dari 16 spesimen tanpa pelapisan *silicone soft liner*. Kelompok II terdiri dari 16 spesimen dengan pelapisan *silicone soft liner* setebal 1 mm. Semua subyek dikuring pada temperatur ruang, kemudian direndam dalam air pada suhu 37°C selama 48 jam. Kekuatan fleksural diukur menggunakan *Universal Testing Machine*. Data dianalisis dengan *independent t-test*.

Hasil penelitian menunjukkan bahwa kekuatan fleksural berbeda bermakna ( $p < 0,05$ ), nilai rerata kekuatan fleksural plat resin akrilik *high impact* tanpa pelapisan *silicone soft liner* lebih besar daripada plat resin akrilik *high impact* dengan pelapisan *silicone soft liner*. Kesimpulan penelitian adalah *silicone soft liner* dapat menurunkan kekuatan fleksural pada basis gigi tiruan resin akrilik *high impact*.

Kata kunci : basis gigi tiruan resin akrilik *high impact*, *silicone soft liner*, kekuatan fleksural

## ABSTRACT

High impact acrylic resin is an acrylic resin modified with butadiene styrene rubber and used as denture base material. Denture looseness may occur as a result of alveolar bone resorption and mucosa atrophy which can cause pain and discomfort. Soft liner can be applied on the surface of denture base to improve denture retention. Soft liner is an elastic polymer that can go into undercut area to achieve optimum denture retention as well as a soft cushion to overcome the pain caused by soft tissues's irritation and inflammation. Flexural strength is the maximum load that material can received before fracture. This research aimed to determine the effect of silicone soft liner on the flexural strength of high impact acrylic resin denture base.

This research used 32 rectangular high impact acrylic resin plates (65 x 10 x 2 mm). Group I consisted of 16 specimens without silicone soft liner relining. Group II consisted of 16 specimens with silicone soft liner relining thickness of 1 mm. All of the specimens were cured at room temperature, then immersed in water at 37°C for 48 hours. The flexural strength was measured using Universal Testing Machine. Data were analyzed by independent t-test.

The results showed that the flexural strength were different significantly ( $p < 0.05$ ), the mean of flexural strength of high impact acrylic resin plate without silicone soft liner relining was greater than the high impact acrylic resin plate with silicone soft liner relining. The conclusion of this research is silicone soft liner can decrease the flexural strength of high impact acrylic resin denture base.

**Keywords:** high impact acrylic resin denture base, silicone soft liner, flexural strength