INTISARI

Resin akrilik *self-cured* merupakan material yang sering digunakan pada plat ortodontik. Resin akrilik *self-cured* harus memiliki permukaan yang halus untuk menjaga kenyamanan dan kesehatan jaringan mulut, serta untuk mencegah kolonisasi organisme mikro dan akumulasi plak serta pewarnaan. *Finishing* dan *polishing* harus dilakukan pada resin akrilik *self-cured* untuk memperoleh permukaan yang halus. *Polishing* mempunyai 2 cara yaitu *polishing* mekanis dan kimiawi. Tujuan dari penelitian ini adalah untuk mengetahui perbedaan kekasaran permukaan plat ortodontik berbahan dasar resin akrilik *self-cured* dengan teknik *polishing* kimiawi dan mekanis.

Jenis penelitian ini adalah eksperimental laboratoris. Subjek penelitian berupa resin akrilik *self-cured* berbentuk balok (panjang 30mm, lebar 15mm, dan tinggi 3mm). Subjek berjumlah 12 buah dan dibagi menjadi 3 kelompok yaitu kelompok *polishing* mekanis, kimiawi, dan kontrol (n=4). Kelompok *polishing* mekanis menggunakan *prophylactic paste*, kelompok *polishing* kontrol menggunakan *pumice* dan kelompok *polishing* kimiawi dengan cara direndam ke dalam cairan metil metakrilat pada suhu 75^{o}C selama 10 detik. Kekasaran permukaan resin akrilik *self-cured* diukur menggunakan *surface roughness measuring instrument*. Data kekasaran permukaan dianalisis secara statistik menggunakan ANAVA satu jalur dan *Least Significant Difference* (LSD) (α=0,05).

Hasil penelitian menunjukkan bahwa terdapat pengaruh yang signifikan antar cara kelompok *polishing* terhadap kekasaran permukaan resin akrilik self-cured ($p<0,05$). Hasil uji $LSD_{0,005}$ menunjukkan perbedaan antara kelompok *polishing* mekanis dan kimiawi serta kelompok *polishing* kontrol dan kimiawi, sedangkan kelompok *polishing* mekanis dan kontrol sama. Kesimpulan penelitian ini adalah kekasaran permukaan resin akrilik *self-cured* dengan teknik *polishing* mekanis lebih rendah daripada teknik *polishing* kimiawi.

Kata kunci: Resin akrilik *self-cured, polishing*, kekasaran permukaan

ABSTRACT

Self-cured acrylic resin has been used mostly as material for producing orthodontic plate. Acrylic resin should have a smooth surface to improve the patient's comfort and health of oral tissues, and to preven colonization of microorganism and plaque accumulation and staining. The finishing and polishing phases of self-cured acrylic resin are essential at obtaining a smooth surface. Polishing can be performed through either mechanical or chemical methods. The aim of this study was to determine the differences of mechanical polishing and chemical polishing on the surface roughness of orthodontic plate based self-cured acrylic resin.

This study was experimental laboratory. Subjects were 12 speciments divided into three groups, according to the mechanical polishing, control, and chemical. Mechanical polishing group was performed using prophylactic paste, control polishing group was performed using pumice, and chemical polishing group was accomplished by immersing the speciments in methyl methacrylate monomer heated approximately to 75oC for 10 s. The surface roughness of test speciments were assessed by surface analyzer instrument. The data were subjected to one-way analysis of variance (ANOVA) and Least Significant Difference (LSD).

The results of the research showed that there was significant influence the steps of polishing group of the surface roughness self-cured acrylic resin ($p<0,05$). $LSD_{0,005}$ test showed significant difference between mechanical polishing group and chemical polishing group with control polishing group and chemical polishing group, whereas mechanical polishing group and control polishing group same. The conclusion of this study was the surface roughness self-cured acrylic resin of the mechanical polishing was lower than that polishing chemical.

Key words: self-cured acrylic resin, polishing, surface roughness.