

INTISARI

Biodegradasi semen ionomer kaca konvensional (SIK) akibat paparan metabolit asam bakteri *Streptococcus mutans* dapat menyebabkan kekasaran permukaan SIK konvensional. Agen pelindung *light cured nanofilled self adhesive resin* dan *cocoa butter* dapat digunakan untuk melindungi SIK dari kontaminasi bakteri *S.mutans* yang terdapat pada biofilm di permukaan restorasi. Tujuan dari penelitian ini adalah untuk mengetahui perbedaan kekasaran permukaan SIK konvensional dengan pelapis agen pelindung *light cured nanofilled self adhesive resin* dan *cocoa butter* setelah direndam selama 14 hari dalam suspensi bakteri *Streptococcus mutans*.

Tiga puluh dua diskus SIK konvensional dengan diameter 5 mm dan tebal 2 mm dibagi menjadi dua kelompok (n=16) yaitu kelompok dengan perlakuan pelapisan *light cured nanofilled self adhesive resin* dan kelompok dengan perlakuan pelapisan *cocoa butter* kemudian kedua kelompok direndam suspensi bakteri *S.mutans* selama 14 hari. Setelah 14 hari, kekasaran permukaan SIK konvensional diukur menggunakan *Surface Roughness Measuring Instrument*. Hasil pengukuran di analisis menggunakan uji t tidak berpasangan dengan taraf signifikansi 95 % ($\alpha = 0,05$).

Hasil penelitian menunjukkan rerata kekasaran permukaan SIK konvensional dengan pelapis *cocoa butter* ($1,7831 \pm 0,52163$) lebih besar dibandingkan SIK konvensional dengan pelapis *light cured nanofilled self adhesive resin* ($0,8162 \pm 0,18903$). Hasil uji t tidak berpasangan menunjukkan bahwa terdapat perbedaan yang signifikan antara kekasaran permukaan SIK konvensional dengan pelapis *cocoa butter* dan dengan pelapis *light cured nanofilled self adhesive resin* ($p < 0,05$). Kesimpulan penelitian ini adalah permukaan SIK konvensional dengan pelapis *cocoa butter* lebih kasar jika dibandingkan dengan permukaan SIK konvensional dengan pelapis *light cured nanofilled self adhesive resin* setelah direndam suspensi bakteri *S.mutans* selama 14 hari.

Kata kunci : *Streptococcus mutans*, biodegradasi, semen ionomer kaca konvensional, agen pelindung, kekasaran permukaan

ABSTRACT

Biodegradation of conventional glass ionomer cement (GIC) caused by acid products of *Streptococcus mutans* can lead to surface roughness of conventional GIC. Coating agents such as light cured nanofilled self adhesive resin and cocoa butter can be used to protect GIC from *S.mutans* contamination at the surface of restoration. The aim of this study was to compare the difference between surface roughness of conventional GIC coated with light cured nanofilled self adhesive resin and cocoa butter after immersed in *S.mutans* suspension for 14 days.

Thirty two discs of conventional GIC, with 5 mm diameter and 2 mm thickness were divided into two groups (n=16) ; group one coated with light cured nanofilled self adhesive resin and group two coated with cocoa butter, then all specimens were immersed in *S.mutans* suspension for 14 days. After 14 days immersion, surface roughness of all specimens in both group were measured using Surface Roughness Measuring Instrument. Data were analyzed with independent t-test with 95 % confidence level ($\alpha = 0,05$).

The results showed that surface roughness value of conventional GIC coated with cocoa butter ($1,7831 \pm 0,52163$) was higher than in conventional GIC coated with light cured nanofilled self adhesive resin ($0,8162 \pm 0,18903$). Independent t-test showed there was statistically significant difference of surface roughness value between two groups ($p < 0,05$). The conclusion of this study was the surface of conventional GIC coated with cocoa butter were rougher than the surface of conventional GIC coated with light cured nanofilled self adhesive resin, after immersed in *S.mutans* suspension for 14 days.

Keywords : *Streptococcus mutans*, biodegradation, conventional glass ionomer cement, coating agent, surface roughness