

INTISARI

E-glass FRC merupakan bahan restorasi karies gigi yang tahan terhadap lingkungan asam. *E-glass FRC* didalam mulut berkontak dengan saliva. Derajat keasaman saliva yang berubah-ubah dapat mempengaruhi proses degradasi. Degradasi *E-glass FRC* menyebabkan kekasaran permukaan sehingga meningkatkan perlekatan mikroorganisme. Tujuan penelitian ini untuk mengetahui pengaruh derajat keasaman saliva terhadap perlekatan *S. mutans* pada bahan tumpatan *E-glass FRC*.

Penelitian ini menggunakan *E-glass FRC*, saliva buatan, dan bakteri *S. mutans*. Dua belas sampel (diameter 5 mm, tinggi 2 mm) dibagi 3 kelompok direndam dalam saliva buatan pH 4, 6, dan 8 selama 14 hari, 37°C. Sampel dibilas menggunakan PBS kemudian dimasukkan ke suspensi bakteri diinkubasi 24 jam, 37° C. Pengenceran dilakukan hingga 10⁻³, 0,1 ml dari pengenceran terakhir diambil untuk dikulturkan pada media BHI agar, diinkubasi 48 jam, 37° C. Jumlah koloni bakteri *S. mutans* dihitung menggunakan *colony counter* (CFU/mL). Analisis data menggunakan uji ANAVA satu jalur ($\alpha=0,05$).

Hasil penelitian menunjukkan nilai rerata jumlah koloni *S. mutans* adalah (130, 25 ± 13,54) x 10⁴ CFU/mL (pH 4), (75,75 ± 16,35) x 10⁴ CFU/mL (pH 6) dan (112,75 ± 25,64) x 10⁴ CFU/mL (pH 4) . Hasil uji ANAVA satu jalur menunjukkan derajat keasaman saliva berpengaruh signifikan ($p>0,05$) pada perlekatan *S. mutans* pada bahan tumpatan *E-glass FRC*. Hasil uji LSD menunjukkan perbedaan bermakna antar kelompok pH 4 dan pH 6 serta kelompok pH 6 dan pH 8. Kesimpulan penelitian ini adalah derajat keasaman saliva berpengaruh terhadap perlekatan *S. mutans* pada bahan tumpatan *E-glass FRC*.

Kata kunci: *E-glass FRC*, pH saliva, *Streptococcus mutans*

ABSTRACT

E-glass *FRC* is a restoration material of dental caries which is resistant at acid environment. E-glass *FRC* inside the mouth will contact with saliva. Vary in salivary pH affect the degradation process. Degradation in E-glass *FRC* make surface roughness thus it will increase the adhesion of microorganism. This study aims to examine the effect of salivary pH on *S.mutans* adhesion to E-glass *FRC*.

This research used e-glass *FRC*, artificial saliva, and *S.mutans* colony. Twelve E-glass *FRC* (diameter of 5 mm and height of 2 mm) were divided into 3 treatment groups was soaked in artificial saliva pH of 4, 6, and 8. Samples were rinsed with PBS and then were put into bacterial suspension for 24 hours, 37°C, diluted to 10^{-3} , 0,1 ml of the final dilution were cultured on BHI agar, incubated for 48 hours, 37°C. *S.mutans* colony were determined using colony counter (CFU/mL). Data analysis of this research was done one-way ANOVA test ($\alpha=0,05$).

The result showed that the mean of *S.mutans* colonies is $(130,25 \pm 13,54) \times 10^4$ CFU/mL (pH 4), $(75,75 \pm 16,35) \times 10^4$ CFU/mL (pH 6) dan $(112,75 \pm 25,64) \times 10^4$ CFU/mL (pH 8). One-way ANOVA test results showed that pH saliva significantly influenced ($p>0,05$) the surface roughness which results which result in adherence of *S.mutans* to the E-glass *FRC*. LSD test results showed a significant difference between pH 4 and 6 group, pH 6 dan pH 8 group. The conclusion of this research is salivary pH affect adhesion of *S.mutans* to E-glass *FRC*.

Keyword: E-glass *FRC*, pH saliva, *Streptococcus mutans*