

INTISARI

Pemakaian alat ortodonti cekat diantaranya teknik *Edgewise* dan *Straightwire* mempunyai faktor resiko diantaranya yaitu meningkatnya jumlah retensi plak yang terkandung bakteri salah satunya *Streptococcus mutans*, sulitnya pembersihan mengakibatkan terjadinya demineralisasi email dengan ditandainya lesi *white spot*. Tujuan penelitian untuk mengetahui bagaimana pengaruh perawatan ortodonti cekat teknik *Edgewise* dan *Straightwire* terhadap insidensi lesi *white spot* dan akumulasi bakteri *Streptococcus mutans*.

Sampel terdiri dari kelompok kontrol (8), kelompok teknik *Edgewise* (8), dan kelompok *Straightwire* (8). Waktu pengamatan sampel adalah pada bulan ke 6 perawatan dan bulan ke 8 perawatan setelah pemasangan alat ortodonti cekat. Pengamatan lesi *white spot* dengan *caries detector* diaplikasikan di semua regio gigi rahang atas bawah. Pengambilan swab bakteri di regio gigi incisivus lateral kemudian dilakukan prosedur penanaman bakteri pada media selektif *Streptococcus mutans* dan dihitung angka bakteri. Data dianalisis menggunakan Anava dua jalur, uji *Post-Hoc LSD* dan uji korelasi *Pearson*.

Hasil penelitian menunjukkan jumlah lesi *white spot* kelompok *edgewise* lebih banyak dibandingkan kelompok *straightwire* meskipun tidak signifikan di bulan ke-6 maupun bulan ke-8 perawatan ($p > 0,05$), jumlah bakteri *Streptococcus mutans* meningkat di semua kelompok namun tidak terdapat perbedaan yang bermakna ($p > 0,05$). Kesimpulan penelitian ini adalah teknik *Edgewise* dan *Straightwire* meningkatkan insidensi lesi *white spot* dan akumulasi bakteri *Streptococcus mutans* namun tidak terdapat hubungan antara jumlah bakteri dengan insidensi lesi *white spot*.

Kata Kunci : Alat ortodonti cekat, teknik *Edgewise*, teknik *Straightwire*, lesi *white spot*, bakteri *Streptococcus mutans*

ABSTRACT

The use of fixed orthodontic appliances such as Edgewise and Straightwire techniques possess risk factors including the increase in the amount of plaque retention containing with bacteria, one of which is Streptococcus mutans. The difficulty of its cleaning results in demineralization of the enamel marked with white spot lesions. This study was to determine the influence of fixed orthodontic treatment with Edgewise and Straightwire techniques on the incidence of white spot lesions and accumulation of Streptococcus mutans.

The type of this study was clinical laboratory experiment. The study samples consisted of a three group consisted of 8 samples each group, namely control group, Edgewise technique group, and Straightwire technique group. We observed the samples at the 6th month and 8th month of the treatment after the installation of fixed orthodontic appliances. The observation of white spot lesions with caries detector was applied in all regions of the lower maxillary teeth. Bacterial swabs were acquired in the lateral incisors region then carried out the bacterial culture procedure on selective media of Streptococcus mutans and then bacterial count was calculated. Data were analyzed using two-way Anava, the Post-Hoc LSD test, and the Pearson correlation test.

Results showed that the number of white spot lesions in the Edgewise group was higher than in the Straightwire group in the 6th or 8th month of treatment although it was not significant ($p>0.05$). The number of Streptococcus mutans bacteria increased in all groups, but there were no significant differences ($p>0.05$). Conclusion of this study is the Edgewise and Straightwire techniques increase the incidence of white spot lesions and accumulation of Streptococcus mutans but no relationship between the number of bacteria with the incidence of white spot lesions are found.

Keywords: Fixed orthodontic appliances, Edgewise technique, Straightwire technique, white spot lesions, Streptococcus mutans bacteria