

## INTISARI

Susunan gigi berjejal dapat dikoreksi dengan menggunakan alat ortodonti cekat. Penumpukan plak pada awal pemakaian alat ortodonti cekat cenderung lebih tinggi umumnya dikarenakan susunan gigi-geligi yang belum teratur sehingga adanya daerah yang sukar dijangkau oleh alat pembersih mekanis sehingga menyebabkan tertahannya bakteri plak. *Lactobacillus acidophilus* merupakan salah satu bakteri yang ditemukan pada plak gigi pasien ortodonti dan spesies utama dari *Lactobacillus sp.* yang dapat menyebabkan karies gigi. Tujuan dari penelitian ini adalah untuk mempelajari hubungan antara lama pemakaian alat ortodonti cekat dan indeks keberjejalan gigi dengan jumlah koloni *Lactobacillus acidophilus*.

Penelitian ini merupakan penelitian observasi analitik dengan metode *cross sectional*. Subjek berjumlah 19 mahasiswa FKG UGM 2012 pengguna ortodonti cekat dengan kisaran umur 19-24 tahun. Subjek diukur indeks keberjejalan gigi, dicatat lama pemakaian alat ortodonti cekat dan dilakukan swab plak gigi kemudian dilakukan pengenceran  $10^{-1}$  dalam larutan NaCl dan ditanam dalam media agar rogosa. Jumlah koloni bakteri setelah inkubasi 2x24 jam dihitung menggunakan *colony counter*. Data-data kemudian dianalisis dengan uji korelasi Spearman.

Hasil uji korelasi Spearman menunjukkan adanya hubungan yang kuat dan berlawanan arah ( $r = -0,832$  dan  $p = 0,000$ ) antara lama pemakaian alat ortodonti cekat dan jumlah koloni *Lactobacillus acidophilus*. Hasil juga menunjukkan adanya hubungan yang kuat dan searah ( $r = 0,730$  dan  $p = 0,000$ ) antara indeks keberjejalan gigi dan jumlah koloni *Lactobacillus acidophilus*. Kesimpulan dari penelitian ini adalah adanya hubungan yang kuat antara lama pemakaian alat ortodonti cekat dan indeks keberjejalan gigi dengan jumlah koloni *Lactobacillus acidophilus*.

**Kata Kunci:** lama pemakaian alat ortodonti cekat, indeks keberjejalan gigi, jumlah koloni bakteri, media agar rogosa, *Lactobacillus acidophilus*

## ABSTRACT

*Crowding of teeth can be corrected with fixed orthodontic appliance. The accumulation of plaque in the early use of fixed orthodontic appliance tend to be higher due to tooth arrangement that have not been organized so that areas which are difficult to reach by mechanical properties causing retention of plaque bacteria. *Lactobacillus acidophilus* is a bacteria found in dental plaque of orthodontic patients and the main species of *Lactobacillus* sp. which can lead to dental caries. The purpose of this study was to study the correlation between duration of use of fixed orthodontic appliance and malalignment index with the number of *Lactobacillus acidophilus* colonies.*

*The study was an observational analytic with cross sectional method. Subjects numbered 19 FKG UGM 2012 students who fixed orthodontic appliance users in a range of 19 to 24 years old. Malalignment index of each subject was measured, noted the duration use of fixed orthodontic appliance and in each subject was performed dental plaque swab which would be carried with dilution  $10^{-1}$  in NaCl solution and embedded in rogosa agar medium. The number of bacterial colonies afer incubation 2x24 hours were calculated using colony counter. Datas were analyzed by spearman correlation test.*

*Spearman correlation test results showed a strong correlation and in the opposite direction ( $r=-0,832$  and  $p=0,000$ ) between duration of use fixed orthodontic appliance and the number of *Lactobacillus acidophilus* colonies. The results also showed a strong correlation and same direction ( $r=0,730$  and  $p=0,000$ ) between malalignment index and the number of *Lactobacillus acidophilus* colonies. The conclusion of this study is a strong correlation between duration of use fixed orthodontic appliance and malalignment index with the number of *Lactobacillus acidophilus* colonies.*

**Keywords:** *duration of use fixed orthodontic appiance, malalignment index, number of bacterial colonies, rogosa agar medium, *Lactobacillus acidophilus**