

INTISARI

Penggunaan alat ortodontik terutama alat ortodontik cekat dapat mengakibatkan peningkatan jumlah plak. Alat yang selalu melekat serta desain yang rumit menyulitkan pembersihan gigi dan menjadi tempat akumulasi makanan. Bakteri plak dapat merusak gigi dengan membentuk *white spot* berlanjut menjadi karies. Kontrol plak diperlukan untuk mencegah kerusakan gigi dan menjaga kebersihan mulut, salah satunya dengan pasta gigi yang mengandung bahan antibakteri. Pasta gigi ortodontik dikembangkan untuk membantu mengurangi permasalahan pada pasien ortodontik. Bakteri di dalam plak yang berperan dalam perkembangan karies gigi salah satunya adalah *Lactobacillus acidophilus*. Penelitian bertujuan untuk mengetahui adanya perbedaan efektivitas pasta gigi ortodontik dengan pasta gigi non ortodontik terhadap pertumbuhan *L. acidophilus*.

Penelitian memakai sampel pasta gigi ortodontik dan pasta gigi non ortodontik dengan merek yang sama. Kedua pasta gigi memiliki bahan antibakteri yang sama, kecuali kolostrum pasta gigi ortodontik 10 kali lebih banyak, dan *xylitol* yang hanya terdapat pada pasta gigi non ortodontik. Bakteri *L. acidophilus* ditanam pada *Blood agar plate*, kemudian dibuat sumuran diameter 6 mm. Sampel pasta gigi dicampur dengan saliva dan dimasukkan ke dalam sumuran. Media diinkubasi 48 jam suhu 37°C. Diameter zona hambat diukur dengan jangka sorong. Data dianalisis menggunakan uji t.

Hasil penelitian menghasilkan rerata diameter zona hambat bakteri pasta gigi ortodontik lebih besar dari pasta gigi non ortodontik dan uji t menunjukkan nilai $p < 0,05$. Berdasarkan hasil tersebut dapat disimpulkan bahwa terdapat perbedaan efektivitas pasta gigi ortodontik dan pasta gigi non ortodontik ditunjukkan dengan zona hambat pertumbuhan *L. acidophilus* yang lebih besar pada pasta gigi ortodontik.

Kata Kunci: Pasta gigi ortodontik, Pasta gigi non ortodontik, Zona hambat, *Lactobacillus acidophilus*.

ABSTRACT

The use of orthodontic appliances especially fixed orthodontic appliances can lead to an increase in the number of plaques. Orthodontics appliances that are always attached and have a complex design make it difficult to clean and will become a place of food accumulation. Plaque bacteria can damage the teeth by forming a white spot and will become into caries. Plaque control is needed to prevent tooth decay and maintaining oral hygiene, for example by the use of toothpaste containing antibacterial ingredients. Orthodontic toothpaste developed to help reduce problems in orthodontic patients. The bacteria in plaque that play a role in the development of dental caries is *Lactobacillus acidophilus*. The aim of this study was to know differences in effectiveness of orthodontic tooth paste with non orthodontic toothpaste on the growth of *L. acidophilus*.

The research used a samples of orthodontic tooth paste and non-orthodontic tooth paste with the same brand. Both toothpaste has the same antibacterial ingredients, except the content of colostrum orthodontic tooth paste have 10 times higher, and the content of xylitol is only found in non-orthodontic tooth paste. *L. acidophilus* bacteria planted on Blood agar plate, then made the wells with diameter of 6 mm. Samples of toothpaste mixed with saliva and put in wells. The media were incubated 48 hours at 37 °C. The diameter of inhibition zone was measured with calipers. Data were analyzed using t-test.

The results of the study resulted in a mean diameter of zone of inhibition of bacterial toothpaste orthodontic greater than non-orthodontic tooth paste and t test showed the value of $p < 0.05$. Based on these results we can conclude that there are differences in the effectiveness of orthodontic tooth paste and non-orthodontic toothpaste indicated with zone of growth inhibition of *L. acidophilus* were greater in orthodontic toothpaste.

Keywords: Orthodontic Toothpaste, Non-Orthodontic Toothpaste, Zone of inhibition, *Lactobacillus acidophilus*.