

INTISARI

Koreksi *deep overbite* pada teknik ortodonti *edgewise* biasanya dilakukan pada tahap *leveling* dan *aligning*, menggunakan *L Loop Archwire* atau *Reversed Curve Archwire* untuk intrusi gigi. Pemberian gaya intrusi pada gigi menyebabkan perubahan komponen cairan sulkus gingiva, salah satunya *Alkaline phosphatase* (ALP). Perubahan kadar ALP cairan sulkus gingiva dapat menjadi indikator proses remodeling tulang akibat adanya gaya ortodonti. Penelitian ini bertujuan untuk mengukur ekspresi ALP cairan krevikular gingiva pada intrusi gigi menggunakan *L Loop Archwire* dan *Reversed Curve Archwire*.

Sepuluh orang pasien Klinik Ortodonti RSGM UGM Prof Soedomo FKG UGM dipilih secara acak sesuai kriteria inklusi. Peranti intrusi gigi *L Loop Archwire* dan *Reversed Curve Archwire* diinsersi kepada masing-masing 5 pasien yang dipilih secara acak. Sampel cairan sulkus gingiva diambil pada sisi mesial dan distal gigi incisivus lateral kanan bawah pada hari ke-0, 7, 14, dan 21, menggunakan *paper point* nomor 40. Pembacaan kadar ALP dalam satuan U/L menggunakan spektrofotometer. Analisis data menggunakan uji statistik ANOVA dua jalur diikuti uji *Post Hoc LSD* ($P < 0,05$).

Hasil penelitian menunjukkan terdapat perbedaan bermakna kadar ALP antar kelompok jenis alat peranti intrusi ($P < 0,05$). Rerata kadar ALP kelompok *L Loop Archwire* secara signifikan lebih rendah dibandingkan rerata kadar ALP kelompok *Reversed Curve Archwire* ($P < 0,05$). Puncak peningkatan kadar ALP kedua kelompok peranti intrusi terjadi pada hari ke-14. Kesimpulan penelitian ini adalah ekspresi ALP cairan sulkus gingiva pada intrusi gigi incisivus menggunakan *L loop Archwire* lebih rendah dibandingkan *Reversed Curve Archwire*.

Kata kunci : *Alkaline phosphatase*, intrusi, *L Loop Archwire*, *Reversed Curve Archwire*

ABSTRACT

Deep overbite correction in the edgewise orthodontic technique is commonly carried out in the leveling and aligning stages, using the L-Loop Archwire (LLA) or Reversed Curve Archwire (RCA). Intrusion forces applied to the tooth cause changes in the gingival crevicular fluid components, one of which is Alkaline phosphatase (ALP). Modification in ALP level of gingival crevicular fluid can be an indicator of bone remodeling due to the orthodontic forces. The objectives of this research was to determine the ALP gingival crevicular fluid expressions in incisor intrusion using LLA and RCA.

Ten people were selected randomly based on the inclusion criteria. The LLA and RCA for intrusion were inserted into those five patients. ALP samples were taken from the mesial and distal side of the mandibular right incisor lateral on day 0, 7, 14, and 21. A spectrophotometer was used to measure ALP levels in U/L. Data analysis employed in this reasearch was two-way ANAVA test followed by LSD Post Hoc test ($P < .05$).

The results showed that there is a significant differences in ALP levels among those of intrusion devices group ($P < .05$). The mean ALP level of the LLA group was significantly lower than that of the RCA group ($P < .05$). The highest ALP level of the two intrusion devices occurred on the 14th day. The conclusion of this study is an ALP expression of gingival crevicular fluid on the incisor intrusion using LLA was lower than that of RCA.

Keywords: Alkaline phosphatase, intrusion, L-Loop, Reversed Curve