

血清『生長激素—類胰島素生長因素系統』於初期矯正治療 時之變化

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Abstract

In this study, we evaluated orthodontic bone modulation in terms of the growth hormone/insulin-like growth factor axis with associated serum indices of hGH, IGF-1, IGFBP-3, alkaline phosphatase, and creatine kinase in the initial treatment stage. Twenty-three volunteers (6 males and 17 females) were selected (aged from 19 years 8 months to 31 years 5 months; mean, 23 years 1 month). Serum was collected from 5 sampling points: the day(S1) of and 2 days (S2) after separation, as well as 2days (S3), 2 weeks (S4), and 4 weeks(S5) after full-mouth bracketing. Samples were studied using either ELISA or IRMA commercial kits(GH DSL-1900, IGF-1 DSL-10-2800, IG-FBP-3 DSL-10-6600, Vitros ALKP slides, and Vitros CK slides) through readers according to the manufacturer's instructions. Data were statistically analyzed using one-way ANOVE and Bonferroni's test with SPSS(vers. 11.0 for Windows) software. The results showed that serum hGH, IGF-1, and IGFBP-3 decreased at S2($p < 0.05$) and increased gradually from S3 to S5. In addition, creatine kinase rose temporarily at S3. It was demonstrated that alveolar bone modulation occurred, probably with mild soft tissue damage during pretreatment, which might shortly have been balanced by homeostasis, since serum values were within normal limits.