

## The Bone Remodeling of Mandible in Bruxers

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**Abstract :** Background: One of the bad habits that requires a treatment and viewed as a risk factor of the temporomandibular disorder is bruxism. Bruxism defined as an awake and/or asleep parafunctional activities include grinding, gnashing, bracing or clenching of the teeth. In particular circumstances such as an increased frequency of episode, duration and the intensity of masseter contractions, caused phenomenon with pathological consequences, i.e., mandibular remodeling. The remodeling in mandibular angle was associated with the masseter and pterygoid medial muscles attachment which in its insertion area. The aim of this study was to compare the mandibular remodeling between bruxers and non-bruxers with ramus height, gonial angle and bigonial width as parameters, and to identify correlation among those parameters in bruxers, using panoramic radiographic. Methods: This study was conducted on 35 bruxers (10 phasic bruxism patients, 6 tonic bruxism patients, and 19 mixed bruxism patients) and 20 non-bruxers as control group. The data were obtained by using questionnaire, clinical examination, and radiographic measurement. Panoramic radiograph measurement was done using soft CBCT EPX Implra (E-Woo Korea). The data was analyzed by using Paired T-Test to see differences between parameters in both group and Pearson Correlation Test to evaluate correlation among parameters. Result: There was significant differences between bruxers and non-bruxers in ramus heights ( $p=0,04$ ), bigonial widths ( $p=0,001$ ), and gonial angles ( $p=0,015$ ). The bruxers showed increased ramus heights and bigonial widths, in other hand, the gonial angles decreased. This study also found that there was highly correlation among ramus height, gonial angles, and bigonial widths. Conclusion: the bone remodeling occurred on inferior and posterior border of mandibular angle in bruxism patient, indicated by the form and size differences between bruxers (phasic bruxism, tonic bruxism, and mixed bruxism) with non-bruxers, which shown by panoramic radiograph.

**Keywords :** bruxism, ramus height, gonial angle, bigonial width

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