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Poster(Non-Competing)

**Determination Of *RUNX2* Single Nucleotide Polymorphism rs6930053 In Class I, II And III Malocclusions**

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**Introduction:** Runt-related transcription factor 2 (*RUNX2*) plays important roles in osteoblast differentiation, tooth development and chondrocyte maturation; hence its involvement in craniofacial development is paramount. Mutation in *RUNX2* is implicated with cleidocranial dysplasia; a bone development disorder, while single nucleotide polymorphism (SNP) in *RUNX2* is associated with Class II/2 malocclusion. This study aimed to determine *RUNX2* SNP of DNA marker (rs6930053) in malocclusion patients from local population. **Materials and Methods:** Genomic DNA were extracted from unstimulated saliva of 31 Class I (control samples), 30 Class II and 30 Class III malocclusion patients. Cephalometric measurements were performed prior to saliva samples collection. The DNA was amplified using the specific primers for marker rs6930053 and the genotyping was done by sequencing. Chi-square test was used to determine differences in allele and genotype frequencies ( $p < 0.05$ ). **Results:** No significant differences were observed in *RUNX2* SNP (rs8004560) in Class I and Class III malocclusion. However, there were significant differences between allele ( $p = 0.000$ ) and genotype ( $p = 0.000$ ) frequency within Class II alone; while significant differences was detected only in allele frequency between control and Class II malocclusion ( $p = 0.019$ ). **Conclusion(s):** There is genetic association between *RUNX2* (rs6930053) in Class II malocclusion in our population. Further studies involving larger number of samples and other DNA markers of *RUNX2* gene should be developed in order to understand the exact role and mechanism of *RUNX2* in different classes of malocclusions.

**KEYWORDS:** *RUNX2*, SNP, rs6930053, malocclusion