

## **Abstract**

**Introduction:** Sagittal root position has important role on labial bone perforation and CBCT images declare information to prevent labial bone perforation. This study aimed to investigate the analysis of sagittal maxillary and mandibular anterior root position in relation to osseous housing for immediate implant placement in Cone Beam Computed Tomography images in Ardabil in 1399.

**Methods and Material:** A retrospective review of CBCT images was conducted on 341 patients, who fulfilled the inclusion criteria. Cross sectional CBCT images in the long axis of maxillary and mandibular anterior teeth and sagittal root position were classified to cl I- IV. In addition, the prevalence of sagittal root position was evaluated according to type of teeth, jaw and sex with chi-squared test and software spss22 and statistical significance was set at  $p < 0.05$

**Results:** The sagittal root position of maxillary anterior teeth was in cl I but sagittal root position of mandibular anterior teeth in central incisors was more in cl II (43.2%), lateral incisors in cl IV (38.5%), cl II (32.5%) , canines in cl I (36%) and cl II (32.9%). There was no significant difference in maxillary and mandibular anterior sagittal root position in division of sex and age ( $p > 0.05$ ).

**Conclusion:** Classification of sagittal root position of maxilla and mandible with CBCT images can help immediate implant placement treatment

**Keywords:** Immediate implant, sagittal root position, maxilla, mandible, cone beam computed tomography.