

## **ABSTRACT**

### **BACKGROUND:**

Age determination of a subject is one of the most important aspects of medico-legal cases and anthropological research. Age verification is required to obtain identification papers in order to be entitled to civil rights and /or social benefits in modern society. From the forensic point of view, the tooth may be the only undamaged human tissue remaining in mass deaths like those killed in a fire or explosion or even in individual homicides. Teeth consist of enamel as the outermost covering of tooth crown and dentin underneath, both of which are hard tissues resistant to decomposition, followed by pulp as the innermost soft tissue core. Likewise cementum is the outermost covering for the surface of root which is also resistant to decomposition.

### **AIM OF THE STUDY**

To estimate and compare the age using digital intraoral periapical radiographs and longitudinal hemi section of tooth.

### **MATERIALS AND METHODS:**

Specimens for the study were collected from extracted teeth in Department of Oral and maxillofacial surgery, Vivekananda Dental College for Women, Tiruchengode. The total sample of 120 mandibular premolars was collected and were divided into 5 groups. Two methods namely radiographic and hemisectioning, were used to estimate age using two parameter namely Pulp/Tooth area ratio and Pulp/Tooth width ratio at Cementoenamel Junction. With the age range of 20-70 years are included in the study.

### **RESULTS:**

The reliability of the radiological and hemisectioning in estimating the age was performed using cohen's kappa statistics. The value obtained by radiological method was 0.928 and by hemisectioning method was 0.928 and thus the reliability of both the methods are almost similar from the obtained values.

### **CONCLUSION:**

The forensic judiciary has strict requirements for exact age estimation. Since there are only limited methods available for adult age estimation using extracted teeth, a combination of various methods are required for accurate age estimation. Increasing the number of parameters which would involve clinical parameter like attrition, radiological parameter like secondary dentin deposition and histological parameters like cementum annulations, dentin translucency along with contribution of additional number of teeth can be a beneficiary aid in standardizing the precision of age estimation procedure in near future.

**KEYWORDS:**

Age estimation, Teeth, Pulp/Tooth ratio, Radiological method, Hemisectioning method.