A radiographic study of mandibular third molar timing in different ethnic groups.

Helen Liversidge [1]
Sigrid Kvaal [2]
Ingunn Tvete [3]

[1]Queen Mary University of London, UK

[2]University of Oslo, Norway

[3]Norwegian Computing Centre, Norway

Corresponding author:
h.m.liversidge@qmul.ac.uk

ORAL PRESENTATION

J Forensic Odontostomatol
2017 Nov 1; Supp1(35): 48
ISSN :2219-6749

ABSTRACT

The nature of differences in the timing of tooth formation between ethnic groups is important when estimating age. The aim of our study was to calculate age of transition of mandibular third (M3) molar tooth stages from archived dental radiographs from sub-Saharan Africa, Malaysia, Japan and two groups from London UK (Whites and Bangladeshi). The number of radiographs was 4430 (1974 males, 2456 females) with an age range 10-23 years.

Method: The third molar was staged into Moorrees stages. A probit model was fitted to calculate mean ages for transitions between stages for males and females and each ethnic group separately. The estimated age distributions given each molar stage was calculated. To assess differences between ethnic groups, three model were proposed: a separate model for each ethnic group, a joint model and a third model combining some aspects across groups. The best model fit was tested using Bayesian and Akaikes information criteria (BIC and AIC) and log likelihood ratio test.

Results: Differences in mean ages of transition of M3 stages were noted across ethnic groups. Mean ages between male groups were less variable than between female groups. Small differences were also noted between timing of M3 between males and females. BIC suggested that a joint model was best with some common features between ethnic groups, however AIC and log likelihood ratio test showed that a separate model for each ethnic group was best.

Conclusion: Some group differences were evident in M3 timing, however, every group showed a large standard deviation in age for each M3 stage. This suggests that a reference data set (with a wide age range and uniform distribution) is probably more important than a population specific convenience sample to estimate age of an individual using M3.