A systematic review of dental sex estimation methods

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ORAL PRESENTATION

ABSTRACT

Background: In forensic odontology, dental sex estimation plays an important role for positive identification of unidentified human remains.

Aim: To describe all the utilized methods of dental sex estimation presented in the literature to date. The set research question was: What dental sex estimation method is the most accurate?

Materials and methods: An electronic search until November 29th 2016 was performed in 5 databases: MEDLINE/PubMed, Cochrane, SciELO, LILACS and Grey literature. The PRISMA guidelines were used. Studies were assessed and included based on the considered population and sample size, the age range, the sex estimation method, the type of statistical analysis and the study outcome. The extracted data enabled to classify the different studies. Meta analysis was used to compare the extracted study outcomes per obtained study group.

Results: The established search string detected 4721 studies. 142 were considered eligible after review of title, abstract and full-text, according to the set exclusion criteria. Sex determination methods were classified based on dental metric and non-metric measurements (n=90), cephalometric analysis (n=16), frontal and maxillary sinuses (n=8), cheiloscopy (n=6), palatal features (n=5) and DNA analysis of teeth (n=17). Teeth measurements for sex estimation were mainly performed on casts (n=52), followed by skeletal remains (n=17), radiologic imaging (n=7), intraoral measurements/photography (n=6), and combinations of the above (n=9).

Discussions and Conclusions: The variety of published dental sex estimation methods highlights the importance of sex estimation in human identification. In forensic practice, according to the available evidence, a need to be able to select the most appropriate evidence based dental sex estimation method exists