两种方法推断上海地区青少年牙龄的比较研究

Park Hyun　　周卓君　　陶　疆　　朱亚琴

（上海交通大学医学院附属第九人民医院口腔综合科，上海市口腔医学重点实验室 /

上海市口腔医学研究所，国家口腔疾病临床研究中心，上海　200011）

【摘要】 目的　分别运用 Demirjian 法和 Willems 法推断上海地区青少年的牙龄，评估两种方法的适用性及准确性。方法　选取上海交通大学医学院附属第九人民医院影像科符合纳入标准的 11~18 岁青少年口腔曲面断层片共 1122 例，其中男性 444 例，女性 678 例；分别使用 Demirjian 法和 Willems 法评估左下颌 7 颗恒牙的总成熟度后得到牙龄，对实际年龄与推断的牙龄之间进行配对 t 检验或 Wilcoxon 秩和检验；通过比较两种方法的平均绝对误差（Mean Absolute Error，MAE），对两种方法的准确度进行评估。结果　Demirjian 法推断的牙龄与实际年龄相比，男性低估 0.35 岁、女性低估 0.27 岁。而用 Willems 法推断时，牙龄比实际年龄分别低估 0.64 岁（男性）和 0.67 岁（女性）。统计学结果显示，两种方法推断的牙龄与实际年龄之间均有显著差异（$P<0.05$）。对比 Demirjian 法和 Willems 法的 MAE，Demirjian 法的 MAE 为 1.23 岁；Willems 法的 MAE 为 1.27 岁。结论　相较于 Willems 法，Demirjian 法的准确度和适用性较高。两种方法均不适用于直接推断上海地区青少年的牙龄，应用时需要对其进行修正。

【关键词】 青少年　牙龄　Demirjian 法　Willems 法

Comparison study on two different methods for estimating dental age in shanghai adolescents

Park Hyun　Zhou Zhuojun　Tao Jiang　Zhu Yaqin

（*Department of General dentistry, Ninth People's Hospital, Shanghai Jiaotong University School of Medicine;*

Shanghai Key Laboratory of Stomatology & Shanghai Research Institute of Stomatololgy;

National Clinical Research Centre of Stomatology, Shanghai　200011）

【Abstract】 Objective　To evaluate the applicability and accuracy of Demirjian and Willems methods of dental age estimation for Shanghai adolescents. Methods　1 122 digital panoramic radiographs (adolescents between 11 to 18 years old) of 444 boys and 678 girls were selected from Radiology Department of the Ninth People's Hospital. Panoramic radiographs were used to evaluate the maturity score of seven left mandibular teeth. Dental age was assessed by using Demirjian and Wilems methods. The discrepancies between chronological ages and dental ages were statistically analyzed by the paired t-test or Wilcoxon Signed rank test. The mean absolute error (MAE) between chronological age and dental age was compared to evaluate the accuracy between two methds. The Demirjian MAE and Willems MAE was statistically analyzed by the paired t-test according to different sexuality. Results　The chronological age and dental age was compared by Demirjian method. The