Abstract

Objective: The prevalence of carotid artery calcification (CAC) detected by dental panoramic images in African-American populations at The University of Texas Health Science Center Houston School of Dentistry is assessed and documented in electronic health records including physician referral.

Background: Cerebrovascular incidents (strokes) and atherosclerosis account for cardiovascular disease (CVD) mortality and morbidity each year (1) and risks are measured by CAC. Previous studies involving dental panoramic images have shown the presence of CAC in 4.8% of the general adult population over 30 years old (2). Previous studies comparing racial groups indicate a lower prevalence of CAC in African Americans (61%) than in whites (77%) (5), yet there is a disproportionately higher rate of CVD mortality (4). Additionally, the prevalence of CACs in patients with periodontal disease is significant (3). There is a need for cost-effective prevention and early detection of these diseases.

Methods: Pre-existing panoramic images of 125 patients taken from 06/01/2019 to 06/01/2024 were extracted from the Axium electronic health record database and examined for the presence of CAC and risk factors (age, gender, race, diabetes, kidney disease, stroke/ myocardial infarction, CVD, and common medications such as antihypertensives, blood thinners, diuretics, antihyperlipidemic, and diabetes medications). Physician referral status is documented.

Hypothesis: We hypothesize that the African-American population will have a lower presence of CAC rate than the previously documented rate of 4.8% in the general adult population (2).

Results:

Conclusion: Dental professionals improve overall health and should maximize the capacity for incidental findings. Early diagnosis of CACs on dental panoramic images potentially reduces patients' morbidity and mortality by highlighting heightened risk factors for CVD. Panoramic radiographs commonly used in dental practices pose a cost-effective, easy-to-use diagnostic tool for CAC than sonography computed tomography, or angiography (5); thereby, strengthening the association between oral-systemic health and promoting early preventative measures.

Citation:

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