Salivary calcium concentration as a screening tool for postmenopausal osteoporosis.

Rabiei M1, Masooleh IS, Leyli EK, Nikoukar LR.

1Department of Oral Medicine, Dental School, 2Department of Rheumatology, Medical School, and 3Department of Biostatistics, Guilan Road Trauma Research Centre, Porsina Teaching Hospital, Guilan University of Medical Sciences, Rasht, Iran

AIM: Measurements of salivary calcium level may be a useful screening tool for osteoporosis in postmenopausal women. The purpose of this study was to clarify whether this measure is valid compared with dual-energy X-ray (Bone Mineral Density) screening tools in osteoporosis.

METHODS: A case-control study was carried out in 40 postmenopausal women with osteoporosis (T-score ≤ -2.5) and 40 women without osteoporosis (T-score > -1 bone mineral density). Salivary samples were collected and calcium concentrations were measured and expressed as mg/dL. Receiver operating characteristic curve analyses was used to determine the optimal cut-off thresholds for salivary calcium in healthy postmenopausal women.

RESULTS: The cut-off point for salivary calcium was 6.1 mg/dL. The sensitivity and specificity, respectively, for identifying women with osteoporosis, were 67.5 (95%CI 52.33-82.67) and 60% (95%CI 44.62-75.38). The area under curve (AUC) was 0.678 (95%CI 0.56-0.79), the positive predictive value (PPV) was 62.79 (95%CI 47.74-77.84) and negative predictive value (NPV) was 64.86% (95%CI 49.27-80.46). The positive likelihood ratio was 1.688 and the negative likelihood ratio was 0.542.
CONCLUSIONS: Salivary calcium concentration discriminates between women with and without osteoporosis and constitutes a useful tool for screening for osteoporosis.

© 2012 The Authors International Journal of Rheumatic Diseases © 2012 Asia Pacific League of Associations for Rheumatology and Wiley Publishing Asia Pty Ltd.

PMID: 23773645 [PubMed - indexed for MEDLINE]