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Title:

BMA assessment standard curves for wrist and ankle of both sexes – data from EpiReumaPt

Abstract: (Your abstract must use Normal style and must fit into the box. Do not enter author details)

Introduction: To determine Bone Microarchitecture Analysis (BMA) standard curves for wrist and ankle in men and women.

Design: EpiReumaPt is an ongoing national, population-based, cross-sectional, epidemiologic study developed by the Portuguese Society of Rheumatology to estimate the prevalence of rheumatic diseases in Portugal. Trained interviewers have been randomly applying a standardized questionnaire to 10,000 subjects at their houses. Selected cases are eventually observed by a rheumatologist and ankle and wrist BMA performed. BMA (DM3A systems) is a new imaging technique based on a digital X-ray system that allows bone microarchitecture quantification and osteo-articular imaging at a highest spatial resolution.

Results: The study was started on 19 September 2011, and up to now, 5000 interviews were performed and 1700 subjects have been observed by a rheumatologist. Mean age was 53.8(SD 18.4), 61.8% were women and 94% Caucasians.

BMA was performed at bone ankle in 747 women and 371 men and at bone wrist in 837 women and 427 men.

Exclusion criteria included: Other ethnicities rather than Caucasian and subjects with missing data on birth date. Subjects with left and right sides assessed were considered as “duplicates” and the right side was removed from the analysis.

The figures represent the BMA standard curves for women and men ankle and wrist.

H parameter (rigidity) was lower in women and decreased with age while measurements in men were very constant along years.

A strong and significant correlation was found between measurements at left and right sides. A highly significant but weak correlation ($r=0.30$) was found between ankle and wrist measurements from the same individuals.

Conclusions: These data allow for the first time the development of BMA standard curves for bone ankle in men and for wrist in men and women. Bone quality is a systemic feature, yet differences may occur among sites assessed.