Abstract

Objectives: To develop a predictive model of appendicular skeletal muscle mass (ASM) based on anthropometric measurements in elderly from Santiago, Chile. Methods: 616 community dwelling, non-disabled subjects 60 years (mean 69.9 ± 5.2 years) living in Santiago, 64.6% female, participating in ALEXANDROS study. Anthropometric measurements, handgrip strength, mobility tests and DEXA were performed. Step by step linear regression models were used to associate ASM from DEXA with anthropometric variables, age and sex. The sample was divided at random into two to obtain prediction equations for both subsamples, which were mutually validated by double cross-validation. The high correlation between the values of observed and predicted MMAE in both sub-samples and the low degree of shrinkage allowed developing the final prediction equation with the total sample. Results: The cross-validity coefficient between prediction models from the subsamples (0.941 and 0.9409) and the shrinkage (0.004 and 0.006) were similar in both equations. The final prediction model obtained from the total sample was: ASM (kg) = 0.107(weight in kg) + 0.251( knee height in cm) + 0.197 (Calf Circumference in cm) +0.047 (dynamometry in kg) - 0.034 (Hip Circumference in cm) + 3.417 (Man) - 0.020 (age years) - 7.646 (R2 = 0.89). The mean ASM obtained by the prediction equation and the DEXA measurement were similar (16.8 ± 4.0 vs 16.9 ± 3.7) and highly concordant according Bland and Altman (95% CI: -2.6 -2.7) and Lin (concordance correlation coefficient = 0.94) methods. Conclusions: We obtained a low cost anthropometric equation to determine the appendicular skeletal muscle mass useful for the screening of sarcopenia in older adults. (Nutr Hosp. 2014;29:611-617) DOI:10.3305/nh.2014.29.3.7062

Keywords