Sarcopenia Diagnosis: Consideration of a “FRAX-like” Approach

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Sarcopenia increases falls and fracture risk. However, sarcopenia is rarely diagnosed clinically, in part because no single consensus definition exists. Current definitions are based on muscle mass alone or in combination with muscle function. However, existing definitions are imperfect in that they may not identify the same individuals as sarcopenic and do not consider fat mass. We hypothesized that an approach to sarcopenia diagnosis by combining clinically intuitive risk factors might better identify those at risk for falls and fractures. To begin evaluating this concept, this study compared sarcopenia prevalence using current definitions with that obtained using a potential alternative (“FRAX-like”) scoring system based on muscle, fat and bone mass, muscle function and falls history.

Community dwelling adults age 70+ underwent DXA body composition measurement and performed a battery of muscle function tests. DXA results were used to calculate appendicular lean mass (ALM)/ht² and a potential measure of total body and muscle fat, the leg fat mass/lean mass ratio. The latter ratio is an attempt to include the effect of obesity on function (i.e. sarcopenic obesity). A fat/lean ratio ≥ 2.5 SD above the mean of 329 young athletes (178M/151F) was defined as high. Sarcopenia prevalence was determined using low ALM/ht², the European consensus approach, (low gait speed or grip strength + low ALM/ht²) and the International consensus approach (low gait speed+low ALM/ht².) An alternative (“FRAX-like”) combined score with 1 point each for low ALM/ht², low grip strength or gait speed, high leg fat/lean ratio, low BMD and history falling in the last year was explored.

97 older adults (49 F/48M; mean age 81 yrs) were studied. Sarcopenia prevalence was 24%, 20% and 10% based on ALM/ht², the European and International approach respectively. Sarcopenia prevalence was 40% using a “FRAX-like” score of ≥ 3. Percentages were significantly different (p<0.0001).

Current approaches do not identify the same proportion of older adults as sarcopenic. A risk score combining several measures important for adverse outcomes related to sarcopenia identifies a larger proportion as potentially being at risk. As ~50% of adults over age 75 fall annually, it is possible that this “FRAX-like” approach may be a more sensitive predictor of adverse outcomes. Future research is necessary to validate proposed sarcopenia definitions.

Disclosures: None

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