

President Round

Scientific Presentation - SP - BMR (Bone, Muscle, Rheumatology)

451 THE BEST MARKER FOR COGNITION—RELATIVE HANDGRIP STRENGTH, ASYMMETRY OR WEAKNESS?

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Introduction: Handgrip strength (HGS) is increasingly used to estimate overall muscle strength. Association between low HGS and cognitive decline has been well documented. Recently, McGrath's team elucidated a new dimension of HGS asymmetry with important implications on physical and cognitive limitations. It is unclear if these effects can be generalised. The Asian working group for sarcopenia (AWGS) has called for 'special considerations' due to 'anthropometric and cultural or lifestyle-related differences'⁶. Hence, we aim to investigate if HGS asymmetry is associated with cognition in Asians.

Methodology: We defined sarcopenia by AWGS consensus: HGS <28 kg for men; <18 kg for women. Asymmetry was HGS >10% stronger on either hand; relative HGS was HGS adjusted for BMI. Low cognitive function was defined as MMSE <26. We compared weakness alone, any HGS asymmetry or relative HGS alone and combination of weakness and HGS asymmetry or relative HGS asymmetry. Each model was adjusted for demographic characteristics, hand dominance, obesity, frailty, physical activity, depression and perceived health status.

Results: 738 Asian subjects participated. Mean age 70.8 ± 0.2 years, 45.1% males, 82.5% Chinese. More than 50% have multimorbidity. 5.4% were frail. Mean BMI 24.4 ± 0.1 kg/m². Mean HGS 22.6 ± 0.3. 93 (12.7%) had symmetrical HGS and not weak, 59 (7.8%) asymmetrical and not weak, 321 (43.6%) symmetrical and weak, 265 (35.9%) asymmetrical and weak. Mean MMSE scores for weakness alone, asymmetry alone and combined weakness and asymmetry are 26.6 ± 0.1, 26.8 ± 0.2 and 26.5 ± 0.2 respectively. HGS asymmetry alone was not associated with better cognitive function OR 0.66 (95%CI: 0.30–1.44). Combined asymmetry and weakness was non-significantly linked to worse cognition OR 2.14 (95%CI: 0.79–5.82). We found relative HGS to be protective for cognitive decline, OR 0.31 (95%CI: 0.12–0.78, p = 0.012).

Conclusion: Our study highlights the impact of ethnicity in sarcopenia research. Our population shows association of relative HGS with cognition. Further longitudinal studies are needed.