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Investigación diagnóstica en personas adultas mayores en entornos con recursos limitados

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Dear Editor,

We appreciate the interest in our work (1). We would like to discuss some points that we believe are important to clarify regarding diagnostic research, particularly in resource-limited settings.

We agree with Daungsupawong and Wiwanitkit that the MNA is not a perfect tool for detecting sarcopenia, and although AUC values are not very high in the literature (2-4), the MNA is the most widely used tool for nutritional assessments in older adults. As we acknowledge in our study, the sample size may have been insufficient to estimate the test performance with preciseness, as reflected by the wide confidence intervals in the MNA short (MNA-SF) and long (MNA-LF) forms: 0.68 (95 % CI: 0.58-0.78) and 0.60 (95 % CI: 0.49-0.71), respectively. These results suggest that MNA may not be directly transferrable to older adults in resource-limited nursing homes, warranting further examination of the reasons for poor performance, and investigating alternatives to detect sarcopenia. While digital technologies and biomarkers are interesting alternatives (5), such suggestion by Daungsupawong and Wiwanitkit may not be easily implemented in institutionalized older adult units in Mexico due to the lack of trained personnel and specialized equipment (6).

We would like to emphasize that diagnostic research is typically crosssectional, as it seeks to detect the presence of an outcome at the specific moment in time when the test is performed (7). Therefore, it is unclear what additional benefit would be gained from conducting clinical trials as suggested by Daungsupawong and Wiwanitkit, and how this approach would address their criticisms of the diagnostic evaluation of the MNA in older adults. While diagnostic randomized controlled trials can be used to compare the implementation of two or more diagnostic tests and their effects on clinical outcomes (e.g., mortality, quality of life, etc.) (8), it would be difficult to justify the conduction of such trials before first understanding the performance of a test within observational frameworks.

It is also important to distinguish between diagnostic test research and diagnostic research. The former evaluates a single test or tool and its usefulness in detecting a disease. The latter aims to infer the probability of having a disease by combining results from various predictors or tests using diagnostic models (e.g., generalized linear models) (7). In our study, we evaluated the performance of MNA as used in clinical practice, treating it as a single diagnostic test despite the fact that it was originally developed as a predictive diagnostic model. An alternative approach would have been to conduct an external validation (9) with possible updating (10) of the MNA, the latter resulting in an importantly modified prediction model. Noteworthy, it would be questionable to propose updating such a widely used model without first evaluating its diagnostic performance in its original form.

Our study concludes that the MNA-SF performs poorly in institutionalized older adults, while there is uncertainty for MNA-LF. Therefore, future research perspectives include more thorough validation of the MNA with the possibility of updating the model or investigating new diagnostic modalities that can be used by untrained personnel.

EFERENCES

 Kammar-García A, Garza-Santiago E, Mancilla-Galindo J, Segura-Badilla OL, Lazcano-Hernández M, Vera-López O, et al. Usefulness of the Mini-Nutritional Assessment in screening for sarcopenia in a sample of institutionalized older persons - A cross-sectional study. Nutr Hosp 2025. DOI: 10.20960/nh.05491

- Yürüyen M, Yavuzer H, Yavuzer S, Cengiz M, Demirdağ F, Kara Z, et al. Comparison of nutritional risk screening tools for predicting sarcopenia in hospitalized patients. Turkish Journal of Medical Sciences 2017;47:1362-9. DOI: 10.3906/sag-1702-43
- Zhang X, Zhang Z, Zhu Y, Tao J, Zhang Y, Wang Y, et al. Comparison of the efficacy of Nutritional Risk Screening 2002 and Mini Nutritional Assessment Short Form in recognizing sarcopenia and predicting its mortality. Eur J Clin Nutr 2020;74(7):1029-37. DOI: 10.1038/s41430-020-0621-8
- Zhu X, Dong X, Wang L, Lao X, Li S, Wu H. Screening efficacy of PhA and MNA-SF in different stages of sarcopenia in the older adults in community. BMC Geriatr 2023;23(1):13. DOI: 10.1186/s12877-022-03716-x
- Picca A, Coelho-Junior HJ, Calvani R, Marzetti E, Vetrano DL. Biomarkers shared by frailty and sarcopenia in older adults: A systematic review and meta-analysis. Ageing Res Rev 2022;73:101530. DOI: 10.1016/j.arr.2021.101530
- Velázquez-Alva MC, Irigoyen-Camacho ME, Cabrer-Rosales MF, Lazarevich I, Arrieta-Cruz I, Gutiérrez-Juárez R, et al. Prevalence of Malnutrition and Depression in Older Adults Living in Nursing Homes in Mexico City. Nutrients 2020;12(8):2429. DOI: 10.3390/nu12082429
- Grobbee DE, Hoes AW. Diagnostic research. In: Grobbee DE, Hoes AW, editors. Clinical epidemiology: principles, methods, and applications for clinical research. 2nd ed. Burlington (MA): Jones & Bartlett Publishers; 2014. p. 63-116.
- Lu B, Gatsonis C. Efficiency of study designs in diagnostic randomized clinical trials. Stat Med 2013;32(9):1451-66. DOI: 10.1002/sim.5655

- Riley RD, Debray TPA, Collins GS, Archer L, Ensor J, van Smeden M, et al. Minimum sample size for external validation of a clinical prediction model with a binary outcome. Stat Med 2021;40(19):4230-51. DOI: 10.1002/sim.9025
- Efthimiou O, Seo M, Chalkou K, Debray T, Egger M, Salanti G. Developing clinical prediction models: a step-by-step guide. BMJ 2024;386:e078276. DOI: 10.1136/bmj-2023-078276