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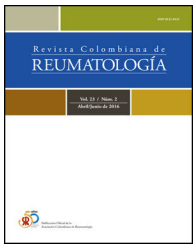

Letter to the Editor

FRAX-based assessment and intervention thresholds in Ecuador

Umbrales de evaluación e intervención basados en FRAX en Ecuador

Dear Editor,

The building of country-specific FRAX models requires the introduction of up-to-date mortality and incidence data on major osteoporotic fractures and hip fractures in each country.

I have read with great interest the paper by Maldonado et al., which was published in June 2020 in the Revista Colombiana de Reumatología.[1] The objective of the study was to develop intervention and assessment curves based on FRAX Ecuador. This study estimates the probability of major osteoporotic fractures and hip fractures without any risk factor and without the inclusion of bone mineral density (BMD) in the following scenarios: (1) Previous fracture history without the inclusion of BMD, (2) *T*-score −2.5 SD without other clinical risk factors, and (3) *T*-score −1.5 SD without other clinical risk factors.

According to Maldonado et al.,[1] the probability of major osteoporotic fractures and hip fractures increased with age in women without risk factors, osteoporosis, and osteopenia.

However, in August 2019 (9 months earlier) the intervention and assessment thresholds based on the revised FRAX Ecuador model (version 4.1) had already been developed, described, and published by Lopez Gavilanez E., in co-authorship with the researchers who created the FRAX algorithm.[2] This article described the characteristics and methods used to build the FRAX Ecuador model and presents the tables of the probability of suffering a major osteoporotic fracture and hip fracture (%) at 10 years in men and women based on the presence of clinical risk factors (CFRs) in the absence of BMD. The graph of the corresponding FRAX-based intervention and assessment threshold curves that were launched in April 2019[2,3] is presented.

In the discussion, Maldonado et al. declares "... which suggests that there has been no modification of the FRAX Ecuador calculator, although it is evident that the model used underestimates the probability of fracture of the Ecuadorian population". However, the comparison between the two models (old and new) was previously published in WCO-IOF-ESCEO 2019.[3] This publication demonstrated differences in the calculated probabilities of risk fractures and concluded that the old model underestimated these probabilities in the Ecuadorian population between 60 and 87 years.[3]

In addition to the prediction of fracture risk, the primary utility of FRAX-based thresholds is to help to select suitable candidates for treatment or BMD assessment.[4] Maldonado et al. did not measure the proportion of women who are eligible for intervention. However, with FRAX Ecuador version 4.1, our group made this calculation and found that the ratio is low, at ≤5% in both sexes and <2% in Ecuadorian women over 60 years of age.[5] Furthermore, it has consistently been shown that in countries where the incidence of hip fractures is low (<150 per 100,000 inhabitants) the FRAX-based fracture probability is also low (<10%), such as in Middle Eastern countries, Lebanon, Turkey, and Latin America (except Argentina).[6] For countries where the proportion of individuals eligible for intervention is low, an alternative is the use of hybrid thresholds that combine age-specific thresholds and fixed thresholds to optimize the selection of eligible candidates for intervention.

Conflicts of interest

None.

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REFERENCES

1. Maldonado G, Intriago M, Guerrero R, Messina OD, Rios C. FRAX-based assessment and intervention threshold curves for osteoporosis evaluation in Ecuador. Rev Colomb Reumatol. 2020;27:155–60, http://dx.doi.org/10.1016/j.rcreu.2020.04.004.

2. Lopez Gavilanez E, Johansson H, McCloskey E, Harvey NC, Segale Bajana A, Marriott Blum D, et al. Assessing the risk of osteoporotic fractures: the Ecuadorian FRAX model. Arch Osteoporos. 2019;14:93, http://dx.doi.org/10.1007/s11657-019-0644-8.
3. Johansson H, Lopez Gavilanez E, Navarro Grijalva M, McCloskey EV, Harvey NC, Lorentzon M, et al. Secular changes in hip fracture incidence in Ecuador and implications for FRAX. Osteoporos Int. 2019;30 Suppl. 2:384–5, http://dx.doi.org/10.1007/s00198-019-04993-w.
4. Kanis JA, Harvey NC, Johansson H, Liu E, Vandenput L, Lorentzon M, et al. A decade of FRAX: how has it changed the management of osteoporosis? Aging Clin Exp Res. 2020;32:187–96, http://dx.doi.org/10.1007/s40520-019-01432-y.
5. Lopez Gavilanez E, Bautista N, Navarro M, Hernandez M, Valdivieso J, Imaicela L, et al. The impact of intervention and assessment thresholds based on the FRAX model in Ecuadorian postmenopausal women. Osteoporos Int. 2020;31 Suppl. I:522. Available from: https://www.wco-iof-esceo.org/sites/wco20/pdf/WCO20-AbstractBook.pdf
6. Kanis JA, Odén A, McCloskey EV, Johansson H, Wahl D, Cyrus Cooper C, et al. A systematic review of hip fracture incidence and probability of fracture worldwide. Osteoporos Int. 2012;23:2239–56, http://dx.doi.org/10.1007/s00198-012-1964-3.

Enrique López Gavilánez[a,b]
[a] *AECE Research Group, The Association of Clinical Endocrinologists of Ecuador, Ecuador*
[b] *Servicio de Endocrinología, Hospital Docente Policía Nacional Guayaquil Nº 2, Guayaquil, Ecuador*
E-mail address: enrique_lopezg57@hotmail.com
0121-8123/

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