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Editorial

FRAX-based intervention thresholds in Asia: Now and future

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Osteoporosis is defined as bone mineral density (BMD) T-score ≤ -2.5 as recommended by the World Health Organization. Such definition was originally developed for research use, but it also became an intervention threshold for prevention of fragility fracture. Multiple studies have demonstrated that people who have a BMD T-score ≤ -2.5 have a greater risk of fragility fracture. However, it has also been shown that most fracture patients had a BMD T-score > -2.5 [1]. Thus, development of fracture risk assessment tool (FRAX) is important to consider important risk factors other than BMD.

FRAX has been developed by professor Kanis based on data from nine population-based cohorts. Eight of these cohorts were comprised of Caucasians, except one which was derived from Japanese [2]. After extensive validation in different populations, FRAX has been recognized as one of the most important tools for fracture risk prediction. FRAX was subsequently used to develop intervention threshold for initiating antiosteoporosis treatment. Such notion has helped to improve the poor sensitivity of BMD-based intervention threshold.

As aforementioned, FRAX was developed based on risk factors identified mainly from Caucasian cohorts. It is unclear if FRAX is useful in making individualized treatment decisions, although FRAX has been recalibrated in many Asian regions using corresponding population-based data in their regions.

In this issue, Lekamwasam [3] reviewed the diversity of FRAX-based intervention thresholds in Asia, which summarized the basis and types (e.g., age-dependent, fixed, and hybrid) of intervention threshold in Asia. It was found that FRAX was not the only intervention threshold applied in some Asian regions (such as Vietnam and Malaysia), while some Asian regions only adopted the intervention threshold suggested by National Osteoporosis Foundation of USA instead of developing their own intervention threshold. Indeed, the hindrance of developing their own intervention threshold or calibrating FRAX could be due to the unavailability of cohorts in their own regions. Moreover, it has been shown that fracture prediction score developed by population-specific risk factors may outperform FRAX in predicting fracture [4,5]. In particular, some risk factors included in FRAX may be specific to Caucasians, which may not be applicable to Asians. Therefore, it is important to develop population-specific fracture prediction score instead of adopting a universal fracture prediction score. Likewise, it may be better to derive the intervention threshold from the population-specific prediction score. Nevertheless, FRAX could still be a justified choice if such population-specific fracture prediction score is not yet available.

Conflicts of interest

No potential conflict of interest relevant to this article was reported.

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