Osteoporosis and Sarcopenia 10 (2024) 45–46

Contents lists available at ScienceDirect

Osteoporosis and Sarcopenia

journal homepage: www.elsevier.com/locate/afos

Editorial

Enhancing osteoporosis management through risk assessment tools

Osteoporosis, a common disease affecting millions globally, remains underdiagnosed and undertreated. We recently showed that the number of hip fractures will double by 2050 compared to 2018 in the global hip fracture study [1], addressing this public health issue is critical. Primary prevention strategies are key, and several approaches exist for identifying osteoporotic patients: these include case-finding, opportunistic screening, and universal dual-energy X-ray absorptiometry (DXA) screening. Case-finding approach has been used in clinical practice for a long time, clinicians identify individuals at risk based on personal observation and risk factors and refer them for DXA scans. The advent of artificial intelligence and big data allows for opportunistic screening using data from other imaging modalities (eg, plain X-ray, computed tomography, magnetic resonance imaging) to predict osteoporosis. For universal screening, DXA screening is recommended for individuals above a certain age. For example, the Australian Government implements universal DXA screening by providing DXA reimbursement for those aged 70 and above.

Besides the aforementioned approaches, case-finding using an objective risk assessment tool can also be used to facilitate the primary prevention of fracture. There are several widely used osteoporosis (including fracture) risk assessment tools, such as fracture risk assessment tool (FRAX) [2], Q-Fracture [3], Garvan [4], and Osteoporosis Self-Assessment Tool for Asians (OSTA) [5]. OSTA initially developed using Asian women's data, has a cutoff point derived from a diverse group of Asian ethnic backgrounds (Chinese, Filipino, Indian, Japanese, Korean, Malay, and Thai). However, optimal cutoff points may vary across populations. A Singaporean study proposed a new OSTA cutoff point specific to their multi-ethnic female population [6].

In recent issue, Uemura et al. [7] evaluated OSTA's utility in osteoporosis screening among Japanese patients undergoing hip surgery, including patients with and without hip fracture. They found that OSTA strongly correlated with DXA-measured bone mineral density (BMD) at the hip. A new optimal cut-off point (−5.4) was further derived to identify high-risk subjects of osteoporosis with the specificity and sensitivity of 80.9% and 73.8%, respectively. This study demonstrated a simple but useful tool in identifying subjects with high risk of osteoporosis and underscored the importance of population-specific cutoffs. This is indeed in line with a previous study showing that simple ethnic-specific risk factors may outperform FRAX in predicting fracture [8].

Despite the potential clinical implications of Uemura et al.'s study, there are notable limitations that warrant consideration. The study's cohort comprised solely patients undergoing hip surgery, the generalizability of the findings to the general Japanese population is unclear. Moreover, the advent of the Chinese osteoporosis screening algorithm (COSA) [9], a promising tool for predicting osteoporosis and the 10-year risk of hip fractures, invites a comparison with OSTA in Japanese population. Additionally, the lack of male participants highlights a significant oversight, given the increasing recognition of osteoporosis as a critical health concern in men [1]. Future research must endeavor to bridge this gap and ascertain the efficacy of OSTA or other osteoporosis risk assessment tools in male osteoporosis screening.

In summary, the risk assessment tool offers a straightforward yet effective tool for identifying high-risk osteoporosis patients. Tailoring cutoff points to local populations enhances fracture prediction accuracy and contributes to reducing the overall burden of osteoporotic fractures.

Conflicts of interest

The author declares no competing interests.

Acknowledgments

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Peer review under responsibility of The Korean Society of Osteoporosis.

https://doi.org/10.1016/j.afos.2024.05.003
Received 29 April 2024; Accepted 14 May 2024
Available online 31 May 2024

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