Editorial

Diagnosing osteoporosis the easy way: FRAX and QFracture

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One disease which links all medical and surgical specialties together is osteoporosis. The basic sciences, paraclinical disciplines, orthopaedics, medicine, endocrinology, gynaecology, geriatrics, radiology and nuclear medicine: all these are involved in the study and management of osteoporosis.

Yet, patients with osteoporosis have to be satisfied with a Cinderella status in most clinics and hospitals. Is it because they are old, frail, often bedridden, and (predominantly) female? Is it because they are not strong enough to fight for their rights? Is it because they are dependent upon family members to seek, access and pay for appropriate healthcare? Or perhaps because patients themselves prefer to accept care from traditional bone-setters, or physicians of alternative medicine? Or is it simply because we clinicians find it difficult to diagnose their illness?

Osteoporosis is a major clinical public health problem affecting South Asia today. Increased life expectancy and higher prevalence of risk factors for the disease have escalated the burden of osteoporosis in society. An estimated 200 million women worldwide have osteoporosis. The International Osteoporosis Foundation estimates that 1.6 million people experience hip fracture every year, and this number will rise to up to 6.3 million by 2050, with half of them occurring in Asia. Across the globe, an osteoporotic fracture is estimated to occur every 3 seconds, while a vertebral fracture happens every 22 seconds.[1]

Sadly, majority of osteoporosis is not detected and thus remains untreated. This situation is all the more tragic because it is avoidable: prevention, diagnosis and management of osteoporosis is relatively easy and simple. The burden of osteoporosis can be minimized by ensuring adequate nutrition, preventing falls, improving muscle strength and optimizing joint health. Apart from calcium and Vitamin D, anabolic drugs such as teriparatide are used to improve bone density. These may be followed by (sequential therapy), or replaced by, the anti-resorptive bisphosphonates - oral alendronate and risedronate, or intravenous ibandronate and zoledronate.

The gold standard for diagnosis of osteoporosis is bone densitometry, performed by dual energy X-ray absorptiometry (DEXA).[2] The utility of DEXA, however is limited by its lack of availability, and cost. There are only 16 DEXA machines across Pakistan, i.e, 1 machine per 10 million population (personal communication: Dr Syed Abbas Raza, SKMH, Lahore). Neighbouring India fares no better, having just 250 machines to serve a population of 1.1 billion.[3] Scarce technical expertise is also needed to perform and interpret the DEXA, thus reducing its impact from a public health perspective.

There are simple clinical scoring systems for the diagnosis of osteoporosis, which do not need bone density measurement. The FRAX tool, developed by the University of Sheffield, United Kingdom, has been in existence for over a decade.[3] Till recently, no data relevant to the South Asian population was included in FRAX. However, data of Singaporean patients of Indian ethnicity can now be used to calculate a 10 year probability of fracture risk, using FRAX.[2] This tool is free to download and use and one can print risk charts for use in clinics as well.

A more recent diagnostic system, which contains separate data for Pakistani, Bangladeshi and Indian immigrants in the United Kingdom is now available.[4] The Q Fracture is free to use, and has the advantage of being useful over a wider age range (30-99 years), including multiple risk factors for osteoporosis in greater detail, and having Pakistani population — specific data sets. With this, one can calculate the risk of fracture over the next one to ten years.[5] All that is required is a few relevant points of the patient's medical, endocrine, past, and family history, as well as drug intake.

Pakistan, as well as other South Asian countries, are not immune to the global epidemic of osteoporosis. We must work to raise awareness about osteoporosis, the silent killer, through events such as

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World Osteoporosis Day (October 20), with organizations such as Pakistan Endocrine Society, Osteoporosis Society of Pakistan, Endocrine Society of India, and the Indian Society for Bone and Mineral Research. Simple messages must be spread about the importance of preventing and managing this disease. The first step, however, will be timely detection. We should make optimal use of economical, validated tools such as FRAX and QFracture, which are based on clinical parameters, rather than expensive imaging, to ensure early diagnosis of osteoporosis in South Asia.

References

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