

Osteoporosis screening in diabetic postmenopausal women: a neglected priority

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Madam, Osteoporosis screening is widely recommended for postmenopausal women; however, its implementation remains suboptimal in many developing countries, including Pakistan. In most cases, diagnosis is only made after the occurrence of a fracture. The coexistence of type 2 diabetes mellitus (T2DM) further complicates this situation, presenting a clinical paradox: despite normal or elevated bone mineral density (BMD) in diabetic patients, fracture risk remains significantly increased.¹

Evidence suggests that between 20% and 49.3% of women in Pakistan suffer from osteoporosis post menopause.² On the other hand, a meta-analysis of 21 studies comprising 11,603 patients with T2DM recorded an overall osteoporosis prevalence of 27.67%.³ Additionally, a cross-sectional study carried out in Karachi showed that 41.5 % of the women diagnosed with osteoporosis had concomitant T2DM.⁴

In patients with T2DM, relative hyperinsulinaemia may exert anabolic effects on bone, contributing to higher BMD. Despite this, chronic hyperglycaemia ensues leading to accumulation of advanced glycation end products within collagen, compromising bone microarchitecture and mechanical strength. Additionally, diabetes-associated microvascular disease and an increased propensity for falls further contribute to skeletal fragility.³

This apparent contradiction is precisely what limits the use of Dual- Energy X-ray Absorptiometry (DXA) scan as a sole diagnostic tool in this subgroup.³ Moreover, the

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conventional Fracture Risk Assessment Tool (FRAX) does not include diabetes as a risk factor, potentially underestimating fracture risk, and the chances of early detection.³

In a country where osteoporosis screening is already inadequate, following a pragmatic and targeted approach by focussing on high-risk subgroups such as postmenopausal women with T2DM may be more practicable. Early risk counselling at the time of menopause or diabetes diagnosis, patient education regarding fracture susceptibility, encouraging weight-bearing exercise and adequate nutrition, and routine fall risk assessment may prove to be cost-effective first steps. For those identified as at higher risk, timely referral for DXA scanning, with careful interpretation of FRAX scores, and adjunctive tools such as trabecular bone score where available, may help reduce fracture-associated morbidity.

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