

Osteoporosis in the Young: A Diagnostic and Therapeutic Challenge

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Abstract

Osteoporosis is characterized by low bone mass, microarchitectural disruption, and skeletal fragility, which increases the risk of fractures. It is commonly observed in menopause and among older adults. Although less common in younger people, it can still pose a significant health risk. In younger individuals, the relationship between BMD and fracture risk is less direct than in postmenopausal individuals. Therefore, the diagnostic guidelines and treatment practices based on BMD measurements in postmenopausal women do not apply to this younger group. Similarly, the Fracture Risk Assessment (FRAX) tool cannot be used to evaluate fracture risk based on BMD in people under 40 years of age. In younger people, osteoporosis refers to those with fragility fractures from low trauma or low bone density caused by a secondary condition.

Early-onset osteoporosis can result from genetic conditions, chronic diseases, hormonal imbalances, nutritional gaps, long-term use of glucocorticoids, or lifestyle choices such as low activity levels, smoking, and poor diet. Detecting it early is often challenging because the disease is typically silent until a fracture occurs. Dual-energy X-ray absorptiometry (DXA) remains the primary diagnostic method; however, thoroughly assessing risk factors through clinical and laboratory evaluation is essential.

Treatment emphasizes lifestyle modifications, including a sufficient intake of calcium and vitamin D, consistent weight-bearing exercise, and avoidance of smoking. Case-based treatment is appropriate when a secondary cause is identified. Osteoporosis-specific pharmacotherapy is recommended for severe osteoporosis with ongoing bone loss. Raising awareness about osteoporosis in young people is crucial, as early prevention and intervention can significantly enhance long-term bone health and quality of life. [*J Assoc Clin Endocrinol Diabetol Bangladesh, 2025;4(Suppl 1): S13*]

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