

key points

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Osteoporosis is defined as a progressive systemic

skeletal disease characterised by low bone mass and microarchitectural deterioration of bone tissue, with a consequent increase in bone fragility and susceptibility to fracture. Most patients with osteoporosis are asymptomatic unless a fragility fracture occurs.

A fragility fracture is a type of pathological fracture that occurs as a result of normal activities, such as a fall from standing height or less, lifting, or bending. There are three fracture sites said to be typical of fragility fractures: vertebral fractures; fractures of the neck of the femur; Colles' fracture of the wrist.

Insufficiency fracture is caused by normal or

physiologic stress on weakened bone. Most commonly, patients present with acute or sub-acute onset back pain (this can be thoracic or lumbar), following minor injuries, falls from standing height or normal activities such as walking. The pain is caused by vertebral body compression fracture/s, and is described variably as sharp, nagging, or dull; movement usually exacerbates pain, and in some cases, pain can radiate to the abdomen. On examination, there is focal spinal tenderness at the site of fracture. The cervical spine is an unusual site of osteoporotic fractures, so any acute neck pain should be investigated for alternative causes.

Following the fracture risk assessment a dual energy

X-ray absorptiometry (DXA) scan may be recommended. This is currently the gold standard for the evaluation of BMD. DXA provides the patient's T-score, which is the BMD value compared with that of control subjects who are at their peak BMD.

Patients with intolerable side effects to oral

bisphosphonates can be referred for consideration of IV bisphosphonates. Patients with inadequate response to bisphosphonates (provided non-compliance has been excluded) can be referred for consideration of other treatments such as teriparatide and denosumab. Patients with debilitating pain caused by recent vertebral fractures should be referred urgently for consideration of vertebroplasty, a spinal procedure in which bone cement is injected percutaneously into a fractured vertebra with the goal of relieving back pain caused by vertebral compression fractures. This service may be available in secondary care via neurosurgery or spinal orthopaedic departments.

Before proceeding with any pharmacological

intervention, lifestyle measures should be considered and encouraged. Bone health can be improved with simple measures such as: increasing levels of physical activity, stopping smoking, reducing alcohol intake, reducing the risk of falls, and ensuring adequate calcium intake and vitamin D status.