

Osteoporosis: Translating State of the Art Knowledge into Daily Practice

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The opening lines of Charles Dickens' *A Tale of Two Cities*: "It was the best of times... It was the worst of times.. It was the age of wisdom,... It was the age of foolishness", are appropriate descriptions of today's management of osteoporosis.

We unraveled the mysteries of bone turnover and developed medications to reduce the risk of fractures. Our results are good: the incidence of hip fractures is dropping in several countries [1-7]: *it is best of times, the age of wisdom*. And yet, many patients with osteoporosis, even those who have sustained fragility fractures are neither diagnosed nor treated: *it is the worst of times, the age of foolishness*...We can identify patients at risk of fractures [8] and target those most likely to benefit from treatment. We can diagnose easily osteoporosis [9], DXA scans are widely available, and mobile units' service medically underserved rural areas: *it is best of times, the age of wisdom*. And yet, reimbursement for the test has significantly decreased, and many DXA Centers are no longer operational: *it is the worst of times, the age of foolishness*.

Osteoporosis is a very common disease [10]. One in two women and one in five men over the age of 50 years are at risk of sustaining osteoporotic fractures [11]. It is silent until a fracture occurs. The one-year mortality after an osteoporotic hip fracture is increased by 20 to 24% in women and even more in men; as much as 50% of those who were previously ambulant are unable to walk independently and about 20% need long-term institutional care [12]. Vertebral fractures, although often silent, are associated with increased mortality and morbidity. They lead to loss of height, kyphosis, sleep disturbances, back pain, protuberant abdomen, loss of self-esteem, and depression. Fractures of the humerus, and distal radius often impair the patient's ability to perform activities of daily living, a particularly distressing situation for those living alone. Osteoporotic fractures are life-changing events.

The prevalence of osteoporosis is such that its management should be in the realm of primary care. Specialists have an important role to play, but their expertise is best used for patients who present diagnostic or therapeutic challenges. Primary care providers have the advantage of knowing the patient and therefore can motivate her to comply with the intake of a medication, on a long-term basis, for an essentially asymptomatic condition, and can integrate the management of osteoporosis with the patient's other medical conditions.

An alarming trend is the number of patients who stop taking their medication fearing rare adverse effects such as atypical femoral shaft fractures or osteonecrosis of the jaw. The risk/benefit ratio should be explained to patients who also need to understand that often these complications can be anticipated: prodromal symptoms often appear well before the fracture [13].

More research is needed to find out why patients at risk of sustaining fractures stop taking their medication. We need to find out how to educate and motivate patients. A medication is only effective if the patient takes it. We also need to know why osteoporosis is so under-diagnosed and under-treated. May be medical researchers should collaborate with marketing researchers.

Given the prevalence of osteoporosis, cost, mortality and morbidity associated with fractures, ease of diagnosis, and availability of effective and relatively safe medications, we can significantly reduce the number

of patients who sustain fractures. It is up to us to make 2013 and the following years, the best or the worst of times, the age of foolishness or the age of wisdom.

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