

Osteoporosis: A Treatable Disease

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Osteoporosis twenty years ago was a very different disease from what we know of it today. At that time a diagnosis of osteoporosis was made at the point of sustaining a fracture as there was no routine method of pre-fracture diagnosis such as bone mineral density measurement. Biochemistry was unhelpful as osteoporosis was associated with few biochemical abnormalities. For example, serum calcium, phosphate and alkaline phosphatase were usually normal. Bone histology was virtually the only way of diagnosing osteoporosis early. Simple radiography could detect fractures but radiological osteopenia was a late finding. The emergence of technology to accurately measure bone mineral density represented an important advance in the management of osteoporosis.

The current generally accepted definition of osteoporosis was used at a consensus development conference in 1993. Osteoporosis was defined as a systemic skeletal disorder characterised by low bone mass and micro-architectural deterioration of bone tissue, with a consequent increase in bone fragility and susceptibility to fracture, suggesting that in addition to the presence of a fracture, the diagnosis of osteoporosis was also related to the risk of developing a fracture. This definition was further defined by the World Health Organisation based on bone mineral density measurements.¹ These were essentially diagnostic thresholds and their role in prognostication and in treatment decisions continues to be refined. In this issue of the *Annals*, Koh and Ng (pg 37) review some of the issues surrounding risk factor assessment and bone densitometry in the management of osteoporosis. In patients with vertebral collapse, differentiating between a benign osteoporotic process and malignant aetiologies is sometimes difficult. Tan et al (pg 8) report on the use of magnetic resonance imaging in this setting.

At one time, it was thought that osteoporosis was rare in Asia compared to the West but as highlighted in Lau's (pg 67) commentary, osteoporosis will soon become a major public health problem in many parts of Asia. Koh (pg 26) reviews data on osteoporosis obtained from Asian populations and provides an Asian perspective to this problem. The importance of diagnosing osteoporosis before the stage of fractures is underlined by the considerable morbidity and mortality associated with osteoporotic fractures.² The paper by Wong et al (pg 3) highlights the costs and outcomes of hip fractures in Singapore.

Menopause is an important event affecting the skeletal health of women, Choo et al (pg 30) elaborate on the problem of osteoporosis in relation to menopause. Twenty years ago the only available treatment was hormone replacement therapy.³ Currently though, there are several therapeutic agents which have been proven to be effective by large scale, well-conducted, randomised, placebo-controlled, double-blinded trials using fracture risk reduction as the main outcome measure. These agents and others are reviewed by Leong (pg 43) who reflects on the increasing options for medical treatment of osteoporosis.

Some advances such as vertebroplasty have helped alleviate the suffering of patients following spinal fractures, as discussed in an original paper by Tsou et al (pg 15). However, the fact remains that the key to effective treatment of osteoporosis in an individual lies in the ability to prevent either a first fracture or subsequent fractures.

As the research in osteoporosis grows, attention is increasingly paid to smaller but important subsets of osteoporosis. Thoo et al (pg 21) provide some information on the Asian male bone mineral density reference, and Duan and Seeman (pg 54) review the problem of osteoporosis in men. Sambrook (pg 48) reviews corticosteroid-induced osteoporosis.

All of these advances would be to no avail if patients who need treatment are not started on appropriate medications, and this appears to be the current state of affairs in many countries.⁴ Dissemination of information and education of both

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physicians and the public are important in addressing the problem of osteoporosis. In Singapore, organisations such as the Osteoporosis Society (Singapore), in conjunction with the Ministry of Health, the College of Family Physicians and the Health Promotion Board are active in this area, publishing clinical practice guidelines, conducting teaching courses for health care professionals and educating the public through various forums. The organisation is part of a bigger family which includes the Asia Pacific Osteoporosis Foundation, the International Osteoporosis Foundation and the World Health Organisation, which share the aims of education of the public and health care professionals concerning osteoporosis. Tsou and Chng (pg 69) highlight such an international initiative focussing on musculoskeletal disease, of which osteoporosis is an important subset. Hopefully with these concerted efforts, more patients will be appropriately treated for osteoporosis, so that the impact of this potentially devastating illness can be minimised.

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