Fragile bones have an enormous impact on health.

Establishing a diagnosis of osteoporosis

If a middle-age or elderly person has a history of a frac- ture due to minimal trauma, then it is imperative to investi- gate fully for osteoporosis.

Patients who are at risk of osteoporosis include:
- Those with a family history of osteoporosis or fractures related to minimal trauma.
- Women with an early menopause.
- Patients on corticosteroids.
- A history of an overactive thyroid.
- Concurrent illnesses such as rheumatoid arthritis, liver disease, malabsorption syndromes and inflammatory bowel disease.

Osteoporosis is diagnosed on the basis of history, physi- cal examination, laboratory tests and by performing a spe- cial test of the bone density. A bone scan or a DXA scan (pronounced “DEXA”). Underlying possi- ble causes, such as a myeloma, or an overactive thyroid, must be excluded.

Bone biochemistry, kidney and liver function tests should be carried out in all patients. A normal full blood count, and a normal ESR (erythrocyte sedi- mentation rate), will exclude any major problem in most cases.

We also carry our plasma protein electrophoresis and check the urine for Bence Jones protein. The science of bone turnover markers has made significant advances in recent years and can help to refine the diagnosis of a bone specialist in deciding which patients require an investigation for an individual patient.

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Prevention and treatment

There is no excuse for leav- ing patients with osteopo- rus untreated, and it is imperative that any patients who are at risk of developing osteoporosis, such as those on long-term steroids, are given adequate preventative therapy.

Fortunately, there are many different treatments available that will reduce further loss of bone, increase bone density and, most often stop, the progression of osteoporosis.

Drug treatments

Calcium and Vitamin D supplementation

Every patient with osteo- porosis should supplement their diet with a gram of cal- cium and 600 micrograms of Vitamin D each day. This would be con- tained in combined Vitamin D and Calcium tablets, e.g. Calcichew 30 Forte, one tablet, twice daily. Ideas - one tablet, twice daily.

Osteos D 3 - one sachet, once daily.

These preparations will ensure an adequate intake of Vitamin D and Calcium. It is important that, no matter what other therapy a patient is taking for their osteopo- risis, an adequate intake of Calcium and Vitamin D must be taken at the same time.

Bisphosphonates
e.g. Alendronate (Fosamax), Risedronate (Actonel) and Ibandronate (Boniva).

These drugs inhibit the resorption of bone and they are the most effective of our management of fragile bones. Alendronate (Fosamax) and Risedronate (Actonel) slow bone turnover to pre- menopausal levels and are very effective at reducing the incidence of all types of frac- tures by a level of 50 per cent over a three-year period.

Ibandronate (Boniva), a recently released once-monthly bisphosphonate, prevents vertebral fractures and is licensed in Ireland for this purpose.

Bisphosphonates are also available and are much more expensive than other drugs.

Selective Osteopor Receptor Modulators (SERMs)
e.g.Raloxifene (Evista).

This drug is used in post- menopausal women to help prevent and to treat osteo- porosis. It reduces the inci- dence and falls in the elderly and it may reduce breast can- cer risk.

Strontium Ranelate (Protelos) and Teriparatide (Forteo)

Protelos uses strontium in a powder form. In women with vertebral frac- tures the drug’s topograph- ical treatment was decreased by 45 per cent over three years. It also increases new bone den- sity and reduces fractures. It has a dual role of action. It increases the bone formation and slows bone resorp- tion. It is a very welcome addition to our armament for osteoporosis and its proven efficacy against hip fracture makes it a potent and a valuable alternative treatment option.

PTH – Parathyroid Hormone e.g. Teriparadine (Forosite)

When given in low dose this drug stimulates bone formation, reduces bone resorption by over two-thirds and of severe vertebral fractures by 90 per cent. After completing an 18-month course, a patient is put on to long-term mainte- nance therapy with one of the other drugs.

Monitoring response to treatment

Up to one-fifth of patients may fail to respond to treat- ment. How best to measure a patient’s response is a continued challenge in the area of bone health. If a patient is not on treatment, then new patients may be identified that have shown that patients with a low bone mineral density response on treatment may benefit from an excellent response from a fracture reduction point of view. Therefore, a combina- tion of the following is most often used.

(a) DXA scan after about three to five years.
(b) Measuring changes in bone mineral density.
(c) Clinical response to treatment.

Summary

Osteoporosis is a common condition that is both pre- ventable and treatable. As the number of treatment options increases we can better target the treatment to the individual patient.

The initial steps include an accurate diagnosis of the condition and non-steroidal anti-inflammatory drugs on falls prevention, diet, “no smoking” and regu- lar exercise.

The next step in treatment involves the choice of a ther- apy from a range of an over- increasing number of drugs effective in this condition.

The final initial steps include an accurate diagnosis of the condition and non-steroidal anti-inflammatory drugs on falls prevention, diet, “no smoking” and regular exercise.

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This article was commis- sioned by the Irish Heart Foundation and can also be accessed on www. ihf.ie, one of Ireland’s most comprehensive online health and fitness websites.