MODERN TREATMENT OF OSTEOPOROSIS

II Krakowskie Sympozjum – Osteoporoza w życiu, praktyce i teorii
Kraków 30.09 – 01.10.1995

Streszczenia:
Materiały kongresowe: REFERATY, s5-6.

MODERN TREATMENT OF OSTEOPOROSIS

P. E. Belchetz
Department of Endocrinology, The General Infirmary at Leeds, UK

The pharmacological treatment of osteoporosis has expanded in recent years greatly. The approach in an individual patient varies according to the age and sex of the pa¬tient and also whether the desire to prevent fractures in a person considered at risk, usually as assessed by measurement of bone density, or treatment of established disease with one or mare fractures already having occurred.
The great majority of patients with osteoporosis are post-menopausal women and patients with major risk factors such as small stature, light, weight, family history of osteoporosis and particularly premature menopause (before the age of 45), prolonged periods of amenorrhoea or a history of anorexia nervosa concomitant medical condi¬tions such as malabsorption, thyrotoxicosis, Cushing’s syndrome or more commonly corticosteroid therapy should be enquired about. There is increasing confidence in the use of bone densitometry by DEXA to predict which of these patients are particu¬larly susceptible to fractures. In such women, hormone replacement therapy has been shown not only to prevent progressive bone loss through Its anti-resorptive activity but it may also increase bone density and has also bean shown to reduce the

incidence of fractures in women treated with oestrogen. If a patient has an intact uterus, proge¬stogen is required as well to avoid endometrial carcinoma. Progestogens arc usually given cyclically for 12 days each month although regimens are being developed which either use continuous combined oestrogen/progestogen, synthetic steroid such as Tibolone or variants involving the administration of progestogen once every three months instead of once a month, HRT with or without progestogen is probably bene¬ficial for the cardiovascular system as well. There appears to be a small increase in risk of breast cancer after 10 years of use. The approximate dose of oestrogen requ¬ired to prevent bone loss is Oestrogen 0.625mg daily, far Oestradiol Valerate 2mg daily and 50mcg transdermal patch changed twice weekly. The role of dietary calcium has been disputed in the past but now is recognised as an important factor. It is recommended that promenopausal women or women on oestro¬gen therapy take in total 1g of calcium daily and postmenopausal women not on oestrogen 1.5g of calcium daily. This may require pharmacological supplementation as many women do not take this amount of calcium in their normal diet.
Treatment of established osteoporosis has been markedly improved by the use of antiresorptive agents particularly bisphosphonates. The first of these was Etidronate Sodium introduced in the United States by Watts and colleagues and by Storm and

colleagues in Denmark. Modifications of this regimen (which involves Etidronate Sodium used for two weeks approximately every three months plus calcium supple¬mentation to prevent the déminéralisation defect that may be associated with continu¬ous high dose Etidronate) include the use of high dose calcium which has been shown to produce more marked and earlier increments in bone mineral density. Newer and more powerful bisphosphonates such as Pamidronate, Tiludronate, Ri-sendronate and more recently Alendronate may provide improvements especially if the bone quality is better without

the risk of the mineralisation defect associated with Etidronate. Nevertheless there are concerns that gross and long term reduction in the remodelling frequency may result In ageing and thus mechanically weakening bone although of higher quantity. Another antiresorptive agent which has found favour widely is the use of Salmon Calcitonin. Injections are often associated with side effects which are much less marked with the intranasal formulation. Calcitonin has the additional and separate property of analgesia. It can be used in association with supplemental Calcium as well.

Fluoride preparations have long been known to increase bone mass but in large amounts used in early trials have been associated with major side effects especially on the gut but also causing the production of mechanically poor bone liable to fractu¬res. Further efforts are underway to try and maintain the anabolic effects of fluoride without the unwanted side effects.

Anabolic agents are currently of little use although anabolic steroids enjoyed a vogue in the past. 10% of osteoporotic patients are men, of whom approximately 2.5% will by hypogonadal and in whom androgen replacement therapy is beneficial. Hypopitu¬itarism may be associated with osteoporosis and growth hormone deficiency especial¬ly of childhood origin may be important in this small group of patients.

In the elderly patient who is particularly susceptible to hip fracture, the importance of vitamin D deficiency is recognised as important, These patients are often exposed to little sunlight, take poor diet and not only metabolise vitamin D poorly often due to renal impairment but the calcium absorbing response to vitamin D is diminished in old age. A large multi-centre double blind placebo controlled trial of Calcium and Vitamin D supplementation in elderly patients performed in France indicated a significant reduction in hip fractures and also other non-vertebral fractures.

The prospects for future treatment may follow from basic research into the involve¬ment of interlukins and other

cytokines in bone function. All pharmacological treat¬ment should be accompanied by attention to diet, exercise, lifestyle factors such as smoking and alcohol intake and also protection against falls in the elderly.