Osteoporosis

Frances Goodhind

What is Osteoporosis?

- Loss of Bone Mineral Density (BMD)

This leads to

- Serious fractures
- Stress fractures
- Is more common in women than men

BMD

- Reduces with age
- Greatest reduction is in post menopausal women

Because

- Calcium intake and utilisation are often reduced in the elderly
- Less calcium is absorbed from the diet

Why is less calcium absorbed

- Lower intake vitamin D rich foods
- Vitamin D maintains plasma calcium concentrations by increasing its intestinal absorption and mobilising calcium from bones
- Conversion of vitamin D to its active form decreases in the elderly

- This is due to an age related decrease in the production off 7-dehydrocholestrol,the immediate precursor of vitamin D,during adulthood
- Cholecalciferol (vitamin D3),formed in the skin by exposure to ultraviolet light also prevents osteoporotic fractures
- Calcium absorption also impaired in chronic renal and liver disease

How do we measure BMD

- Use dual energy X-ray absorptiometry (DEXA) scanning.
- Scan either proximal femur or lumbar spine
- T score of -3SD or below shows a very low BMD

How important is family history in detecting osteoporosis

- Less common in Afro-Caribbean women

Lower BMD is found in women with FH of

- Osteoporosis
- Brittle bones
- Kyphosis (Dowagers hump)
- Low impact fractures after the age of 50.

Risk Factors

- What are the main risk factors to consider ?
- In pairs list primary and secondary risk factors

Risk factors

- Primary

Female –post menopausal

Increasing age

Low BMI

Caucasian ethnicity

Poor dietary intake Ca and Vit D

Smoking

Sedentary lifestye

Untreated premature menopause

- Secondary

Renal impairment

Chronic liver disease

Rheumatoid arthritis

Long term corticosteroid use

hyperthyroidism

Prevention

- HRT –not now recommended as 1st line
- Ca and Vit D supplement

In pairs :

Give a suitable dose and regimes for prevention of osteoporosis in a housebound elderly patient?

Treatment

- Who should be treated

Nice Guidance No 87 Jan2005 for secondary prevention post fracture

- Women over 75
- Women 65-74 confirmed disease by DEXA
- Postmenopausal women less then 65 with low BMD or confirmed disease with one or more additional age independent risk factors
- Current consultation re primary prevention-limiting treatment to over 75's

Treatment choices

- Biphosphonates
- Ca and |Vit D supplement
- Other drugs :
- Strontium renelate
- Selective oestrogen receptor modulators -Raloxifene
- Parathyroid hormone -Teriparatide

MUR
Case Study 1

- You have a patient who is prescribed

Alendronic acid 70mg weekly

Adcal D3 1 BD

You notice that they don't ask for the calcium on their repeat prescription so initiate a MUR _How would you approach this and what could you discuss?

MUR
Case Study 2

- You have a patient who is 52 who you know has had repeated course of high dose steroids for rheumatoid arthritis for several years and is not on any prevention therapy. In conversation she tells you that her 73 year old mother is in hospital with a fractured neck of femur following a fall.
- How might you use this information to initiate a |MUR?

MUR
Case study 3

- You have a patient on daily risedronate who comes in asking for advice re a sore mouth and ulcers –how can you use this to initiate a MUR

During the MUR you discover the patient is finding it hard to remember to take their tablet each morning at the right time – what can you suggest to help with this

MUR
Case study 4

- You invite a patient for an MUR as you notice that they are on calcium and ergocalciferol which was first prescribed 5 years ago
- How would you approach this consultation

Formulary choices

Prevention and treatment

- Adcal D3 or Calcichew D3 forte 1 bd
- HRT (only effective whilst taken)
- Alendronic Acid tabs 70mg weekly –most cost effective (prevention dose 5mg daily)
- Risedronate 5mg daily or 35mg weekly (prevention dose 5mg od)

Biphosphonates

- Action-absorbed onto hydroxyapatite crystals in bone, slowing both their rate of growth and dissolution, thus slowing the rate of bone turnover
- Used in treatment and prevention
- Caution –osteonecrosis of the jaw has been reported