QUESTION 38

An 84yo female nursing home resident is ambulant but rarely goes outside. She is thin, eats little and has reflux oesophagitis. Medical history includes mastectomy and radiation therapy for breast cancer at age 60 years. There is a past history of DVT. DEXA scan reveals a t score of -2.2 at the spine and -3.0 at the femoral neck. Serum calcium is normal.

In addition to calcium supplementation, which of the following is the most appropriate initial therapy for her osteoporosis?

A. Alendronate
B. Calcitonin
C. Vitamin D
D. Oestrogen
E. Raloxifene
TREATMENT OF OSTEOPOROSIS

Calcium Supplementation
- Evidence that calcium supplementation can reduce the rate of bone loss
- Limited evidence that it can reduce fracture rates
- Shown to be safe and effective so is an essential part of treatment

Specific osteoporosis Pharmacotherapy
- Prior fracture is required for access to these therapies on PBS

1) Bisphosphonates
- Slow bone loss and may improve BMD by 4 to 9% over 2-3yrs
- Reduce bone resorption
- 40-50% reduction in fracture rate (but trials were done with daily dosing)
- First line therapy in post-menopausal osteoporosis
- Should treat for at least 3-4yrs and then rpt BMD
- Alendronate or risendronate are usually first choice of treatment
- In this patient there would be concern about PUD

2) Raloxifene
- Selective oestrogen receptor modulator (SERM)
- Prevents post-menopausal bone loss
- Reduces risk of vertebral fractures by 36% over 4yrs
- Contraindicated if history of VTE

3) Calcitriol
- Some evidence for reduction in vertebral fractures in post-menopausal osteoporosis
- Use as monotherapy is controversial and not supported by current evidence
- Only for patients intolerant of other therapies
- Avoid in pts with history of hypercalciuria/calcium-containing kidney stones

4) Oestrogen/Progestin Therapy
- In the past was 1st line therapy
- Reduces bone turnover, prevents bone loss and improves BMD by 4-7%
- Evidence to suggest reduction in spine and hip fractures
- Need to weigh up risks (breast Ca, stroke, IHD, DVT) and benefits
- Limit to 5yrs of treatment
- Usually started at menopause but has limited role in treating older women
- Would be of concern in this patient mainly given past history of DVT

5) Teriparatide
- Human parathyroid hormone
- Increases bone formation
- Given as daily subcutaneous injection
- Reduces vertebral fractures in post-menopausal women by 65%
- Restricted use due to study showing rats developed bone sarcomas with its use (ie. Must be over 25yrs, no history of Paget's or certain metabolic disorders, no prior XRT to bone)
- Consent required
- Limit use to 18mths

Vitamin D
- Efficacy of agents used to treat osteoporosis probably depends on adequate calcium and vitamin D nutrition
- Where nutritional status is in doubt, supplements should be prescribed
- Ergocalciferol is clearly indicated in proven vitamin D deficiency, in institutionalised or housebound people and women shrouded for cultural reasons
- Evidence suggests that serum 25-hydroxy vitamin D levels should be maintained > 50nmol/L
- Calcitriol is not appropriate for the prevention or treatment of vitamin D deficiency

This patient is almost certainly vitamin D deficient. This is the first choice in treating osteoporosis. Other therapies listed require a prior fracture for PBS approval. There are also some adverse effects which would be of concern in this patient.