Risk factors (other than previous fragility fracture)
- Premature menopause (<45 years) or untreated hypogonadism
- Glucocorticoids (oral) (>5mg/day for >3 months/year)
- Radiological osteopenia
- Diseases linked with increased risk of osteoporosis, e.g. GI disease, coeliac disease, hyperparathyroidism
- Low bone mass as assessed by other techniques
- Maternal history of hip fracture

BMD Measurements
- Diagnosis - DEXA spine and total hip
- Osteoporosis present if, in either hip or spine, T score < -2.5. Caution in interpreting spine measurements in older subjects (>60 years) as degenerative disease may lead to artifactual increase in bone mass.
- No evidence that repeat scan influences management but may help with compliance. Minimum time between baseline and follow up scans is 2 years

Investigations
- FBC, ESR
- Bone & Liver function tests [Ca, P, AlkPhos, ALT, GGT]
- Serum Creatinine
- Serum TSH
- Immunoglobulins
- Testosterone, LH & SHBG (men)

Previous Fragility Fracture
Defined as a fracture from a standing height or less and includes non-traumatic vertebral fractures. A previous fragility fracture is a strong independent risk for further fracture and may be regarded as an indication for treatment without the need for BMD measurement when the clinical history is unequivocal.

Investigations
- FBC, ESR
- Bone & Liver function tests [Ca, P, AlkPhos, ALT, GGT]
- Serum Creatinine
- Serum TSH
- Immunoglobulins
- Testosterone, LH & SHBG (men)

Lifestyle Advice
- Adequate nutrition especially with calcium and vitamin D
- Regular weight bearing exercise
- Avoid smoking and alcohol abuse

For men aged less than 65 years, pre-menopausal women and patients with chronic renal impairment / gastrointestinal disease, specialist referral should be considered.

Recommended daily dose 0.5-1g and 800µ respectively

Review Date: November 2003
Prevention and Treatment of Osteoporosis

Goal for treatment is to reduce fractures in the most cost-effective manner with the fewest side effects. Treatment should be chosen according to likelihood of patient compliance / acceptability of side effect profile and ease of medication regime.

Non-vertebral Osteoporosis (i.e. non-vertebral fracture and/or low BMD at the hip)
- Alendronate 70mg once weekly or, Risedronate 35mg once weekly*
- HRT (see BNF for dose of various HRT products)

Vertebral Osteoporosis (i.e. vertebral fracture and/or low BMD at the hip)
- Alendronate 70mg once weekly or, Cyclic etidronate 400mg daily for 14 days followed by 500mg calcium daily for 76 days and repeat cycle or, Risedronate 35mg once weekly*
- HRT (see BNF for dose of various HRT products)
- Raloxifene 60mg daily

Vertebral and Non-vertebral Osteoporosis
- Treat as non-vertebral osteoporosis

Pain Management
- Stepped analgesia according to level of pain

Other Therapies
- Other therapies licensed for treatment of postmenopausal osteoporosis include calcitriol 0.25 micrograms twice daily (requires regular monitoring of serum Ca) and calcitonin.

*Currently Risedronate is not licensed for use in men.

Antifracture Efficacy of Interventions in Postmenopausal Osteoporotic Women - Strength of Evidence

<table>
<thead>
<tr>
<th>Fracture Site Treatment</th>
<th>Vertebra</th>
<th>Non-Vertebral</th>
<th>Hip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alendronate</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Calcitonin</td>
<td>A</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Calcitriol</td>
<td>A</td>
<td>A</td>
<td>nd</td>
</tr>
<tr>
<td>Calcium</td>
<td>A</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Calcium +vitamin D</td>
<td>nd</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Cyclic Etidronate</td>
<td>A</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Exercise</td>
<td>nd</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>HRT</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Raloxifene</td>
<td>A</td>
<td>nd</td>
<td>nd</td>
</tr>
<tr>
<td>Risedronate</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

A : Randomised controlled trial (RCT)
B : Well designed controlled study without randomisation or quasi experimental study or well designed non experimental study
nd : not demonstrated

Duration of Treatment
Lifestyle measures and calcium / vitamin D supplementation should be continued indefinitely. Specific treatment to reduce fracture risk should be given for a minimum of 5 years. The effect of long term treatment on bone mass and fracture risk is unknown.

Helplines
The National Osteoporosis Society
Camerton, Bath BA2 0PJ
Telephone 01761 471771
Telephone Helpline 01761 472271
Website : www.nos.org.uk

Hope Hospital Osteoporosis Helpline : 0161 206 1060

References

Authors
Osteoporosis Guideline development group, November 2002