# HERTFORDSHIRE MEDICINES MANAGEMENT COMMITTEE

## Teriparatide for treatment of Osteoporosis in Men at Increased Risk of Fracture

<table>
<thead>
<tr>
<th>Drug</th>
<th>Indication</th>
<th>Date last revised</th>
<th>Status</th>
<th>NICE / SMC Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forteso®</strong></td>
<td>Licensed indication: Treatment of osteoporosis in men at increased risk of fracture.</td>
<td>19&lt;sup&gt;th&lt;/sup&gt; Sept 08</td>
<td>Final</td>
<td>SMC review (Aug 08): Rejected NICE: Not assessed (in men)</td>
</tr>
</tbody>
</table>

## HMMC Recommendation

NOT recommended for the management of Osteoporosis in Men with increased risk of fracture based on the evidence presented.

The evidence for the efficacy of Teriparatide in the treatment of osteoporosis in men at increased risk of fracture is based on:

- A double-blind placebo controlled multicentre study (437 men) with osteoporosis (mean age 59 years), and a lumbar spine or proximal femur bone mineral density (BMD) at least 2 standard deviations (SD) below the young adult mean for men (T-score).
- Patients receiving teriparatide had a significantly greater mean percentage increase from baseline in lumbar spine BMD of 5.9% compared to 0.5% in the placebo group.
- It must be noted that there are currently no comparison studies with Bisphosphonates. In addition the study participants had a mean age of 59; patients were younger and at lower risk of fractures than those anticipated to receive teriparatide.
- Since there are limited data on efficacy in the group of patients anticipated to receive this and limited safety data; routine prescribing of Teripratide is NOT recommended at this time.

## Specific issues for local consideration

- Approximately 10 patients in Hertfordshire PCTs would qualify for treatment with Teriparatide.
- It is difficult to ascertain the cost-effectiveness of this treatment in the patient group anticipated to qualify for treatment with Teriparatide (Older Men with resistant Osteoporosis and a high risk of experiencing fractures). Cost of treating 10 patients would be more than £50, 000.
- The drug is classed as a PBR exclusion.
- Safety: The study was originally planned to last for 24 months but was stopped early because of the finding of osteosarcoma during routine toxicology studies in rats. A 24-month observational follow-up study (355 men) found that there were no serious safety concerns and no clinically relevant conditions associated with prior teriparatide treatment. The European Medicines Agency (EMEA) have stated that there have been ten cases of Paget’s disease of the bone; three of them considered possibly related to teriparatide.

## Evidence considered by the Group

- A double-blind multicentre study recruited 437 men with idiopathic or hypogonadal osteoporosis, aged 30 to 85 years (mean 59 years) with lumbar spine or proximal femur bone mineral density (BMD) at least 2 standard deviations (SD) below the young adult mean for men (T-score).
- Patients were randomized equally to placebo, teriparatide 20 micrograms or 40 micrograms per day by subcutaneous injection. Only the results for the teriparatide 20 microgram licensed dose are reported.
- Primary objective was to assess changes from baseline to endpoint in lumbar spine BMD. At study endpoint, patients receiving teriparatide had a significantly greater mean percentage increase from baseline in lumbar spine BMD of 5.9% compared to 0.5% in the placebo group. The mean percent changes from baseline in femoral neck BMD and in whole body bone mineral content were also significantly greater with teriparatide compared to placebo (1.5% vs. 0.3% (p=0.029) and 0.64% vs. –0.45% (p=0.021) for the respective outcomes).
- A 24-month observational follow-up study enrolled 355 men (81%) from the trial. Incidences of new vertebral fractures were 12% and 5.4%, respectively, and the incidences of new moderate to severe vertebral fractures were 6.8% and 1.1%, respectively. Within the subgroup of patients who had at least one prevalent vertebral fracture at baseline the corresponding incidences were 21% (n=9/42) and 7.7% (n=3/39) in the placebo and teriparatide groups respectively for new vertebral fractures; and 14% (n=6/42) and zero for new moderate to severe vertebral fractures. No significant differences between treatment groups in the incidence of non-vertebral fractures.
- In the main trial, Teriparatide was associated with a greater increase in lumbar spine bone mineral density than placebo. There are no head-to-head RCTs comparing Teriparatide with Bisphosphonates (current standard of care). In the absence of robust health economic analyses lack of head-to-head studies with Bisphosphonates, and the limited data for this patient group, it is difficult at this time to determine the absolute benefit of Teriparatide for this indication.