Lancashire & South Cumbria Medicines Management Group

NHS

Osteoporosis: Secondary fracture prevention patient treatment pathway

Rheumatology Alliance and L&SC ICB

November 2025

(Review date November 2028)

Version Number	Date	Amendments made
DRAFT	29/4/25	CR amendments, further updates by DP – with CR and LMcP for comments
DRAFT 1.1	15/8/25	Updated with comments from consultation
FINAL V1.0	17/10/25	Updated post Rheumatology Alliance with post LSCMMG comments DP

Secondary fracture prevention patient treatment pathway for adults over the age of 50

Aim

Assess and manage the risk of fragility fractures using NICE guidance[1, 2, 3, 4, 5, 6] for adults with a history of fragility fracture.

Scope

All adults over the age of 50 following a fracture from standing height or less

All parenteral therapies should be initiated by secondary care

Excluded from this pathway

- Fractures of the digits, scaphoid, skull and face
- Atypical femoral fracture, CrCL < 30 ml/min, hyperparathyroidism, end of life care. These patients should be discussed with the local specialist bone team if appropriate.

Indications for referral to secondary care osteoporosis clinic

- Patients who require parenteral therapy
- Patients at very high risk (as per FRAX/NOGG guidance) who may benefit from anabolic therapies
- Treatment failure (defined as a fragility fracture that has occurred after adherence to bone-sparing therapy for 12 months or more)
- Patients who have experienced osteonecrosis of the jaw and/or atypical femoral fracture due to prior osteoporosis treatment
- Osteoporosis in patients with CKD grade 3b or worse
- Seek local specialist advice for patients under the age of 50

General Advice

For all patients:

- Optimise lifestyle (alcohol, smoking, BMI, exercise)
- Calcium and vitamin D status by dietary &/or supplemental means:
- 800-1000 IU/day of Vitamin D
- 700mg – 1500mg Calcium total intake daily

FOR postmenopausal biological females:

Offer anti-resorptive drug therapy such as oral bisphosphonates e.g.

- **alendronate** *or*
- **risedronate**

as the most cost-effective interventions for secondary prevention unless the criteria below apply.[3]

Consider

- **romosozumab** for those with severe osteoporosis who are at high risk of fracture ***only*** if they have had a major osteoporotic fracture (MOF) (spine, hip, forearm or humerus fracture) within 24 months (so are at imminent risk of another fracture). (*NICE TA 791 criteria)*[47]

Please note contraindications for romosozumab include: patients with previous myocardial infarction or stroke, hypocalcaemia or hypersensitivity to any excipients of the injection (see SPC).[8]

When determining whether to use romosozumab for an individual patient, consideration should be given to their fracture risk over the next year and their cardiovascular risk based on risk factors (e.g. established cardiovascular disease, hypertension, hyperlipidaemia, diabetes mellitus, smoking, severe renal impairment, age). Romosozumab should only be used if the prescriber and patient agree that the benefit outweighs the risk, e.g. by comparing FRAX 10 year hip fracture risk with QRISK3-2018 absolute or relative risk to help aid prescriber/patient of benefit vs risk decision making. When balancing the risks vs benefits of romosozumab, these risk predictions are over 10 years and the increased risk of major cardiovascular events was only seen in the 12 months on romosozumab therapy in ARCH.[9]

Confirm patient is happy to accept monthly home injections administered via patient or carer.

Treat for 12 months using licensed dose and then start oral bisphosphonate or other anti-resorptive agents as appropriate after romosozumab has finished. Whilst on romosozumab, no other anti-osteoporosis medication should be prescribed.

If a patient experiences a myocardial infarction or stroke during therapy, treatment with romosozumab should be discontinued.

Consider

- **abaloparatide** for treating osteoporosis after menopause in people, only if they have a very high risk of fracture.[10] Treat for 18 months using licensed dose and then start oral bisphosphonate or other anti-resorptive agent as appropriate.

Consider

- **teriparatide** as an alternative treatment option for the secondary prevention of osteoporotic fragility fractures in postmenopausal biological females only if they have a very high risk of fracture.[6] Please note, teriparatide is no longer classed as a high cost drug.

Consider

- Intravenous **zoledronate** first line if patient has had a hip fracture and does not meet romosozumab criteria above.[4] Only suitable if CrCl ≥35ml//min, 25(OH)D ≥50 & normal adjusted calcium.

Consider

- Intravenous **zoledronate** second line if aged ≤65 years and oral bisphosphonates are not tolerated, contraindicated or there is treatment failure (major fracture after 6 months of adherent therapy)

Consider

- **denosumab** second line if aged over 65 years and oral bisphosphonates are not tolerated, contraindicated or there is treatment failure (major fracture after 6 months of adherent therapy).[5]

Consider

- **menopausal hormone therapy** for younger postmenopausal biological females (age ≤ 60 years) with high fracture risk, and low baseline risk for adverse malignant and thromboembolic events, HRT as a first-line treatment option. Discuss continued use of HRT after the age of 60 years with the patient, with treatment based on an individual risk-benefit analysis. Individuals at particularly high risk may be considered for combination treatment with other active agents.

Consider

- **raloxifene** as a second line in patients with spinal osteoporosis balancing the benefit including reduction in fracture risk with contraindications, cautions and potential unwanted effects, including breast cancer, ovarian cancer and myocardial infarction in line with TA 161.[6] Raloxifene can be used in advanced renal disease, on specialist recommendation only.

Consider

- **strontium** as a third line option after balancing the benefit including reduction in fracture risk with contraindications, cautions and potential unwanted effects, including VTE and myocardial infarction in line with TA 161 (the NICE inclusion criteria for strontium have been withdrawn but previously were the same as those for raloxifene).

If a woman aged 75 years or older has one or more independent clinical risk factors for fracture or indicators of low BMD has not previously had their BMD measured, a DXA scan may not be required if the responsible clinician considers it to be clinically inappropriate or unfeasible (as per NICE guidance).

FOR Males aged 50 years and older

Offer anti-resorptive drug therapy such as oral bisphosphonates e.g.

- **alendronate** *or*
- **risedronate**

as the most cost-effective interventions for secondary prevention unless the criteria below apply.

Consider

- Intravenous **zoledronate** second line if aged ≤65 years and oral bisphosphonates are not tolerated, contraindicated or there is treatment failure (major fracture after 6 months of adherent therapy)

Consider

- **denosumab** second line if aged over 65 years and oral bisphosphonates are not tolerated, contraindicated or there is treatment failure (major fracture after 6 months of adherent therapy). Must be initiated by a bone health specialist.

Consider

- **teriparatide** as an alternative treatment option for the secondary prevention of osteoporotic fragility fractures in patients at very high risk of fracture. Must be initiated by a bone health specialist. Treat for 24 months using licensed dose and then start ~~oral~~ bisphosphonate or other anti-resorptive agent as appropriate.

Consider

- **strontium** as a third line option after balancing the benefit including reduction in fracture risk with contraindications, cautions and potential unwanted effects, including VTE and myocardial infarction

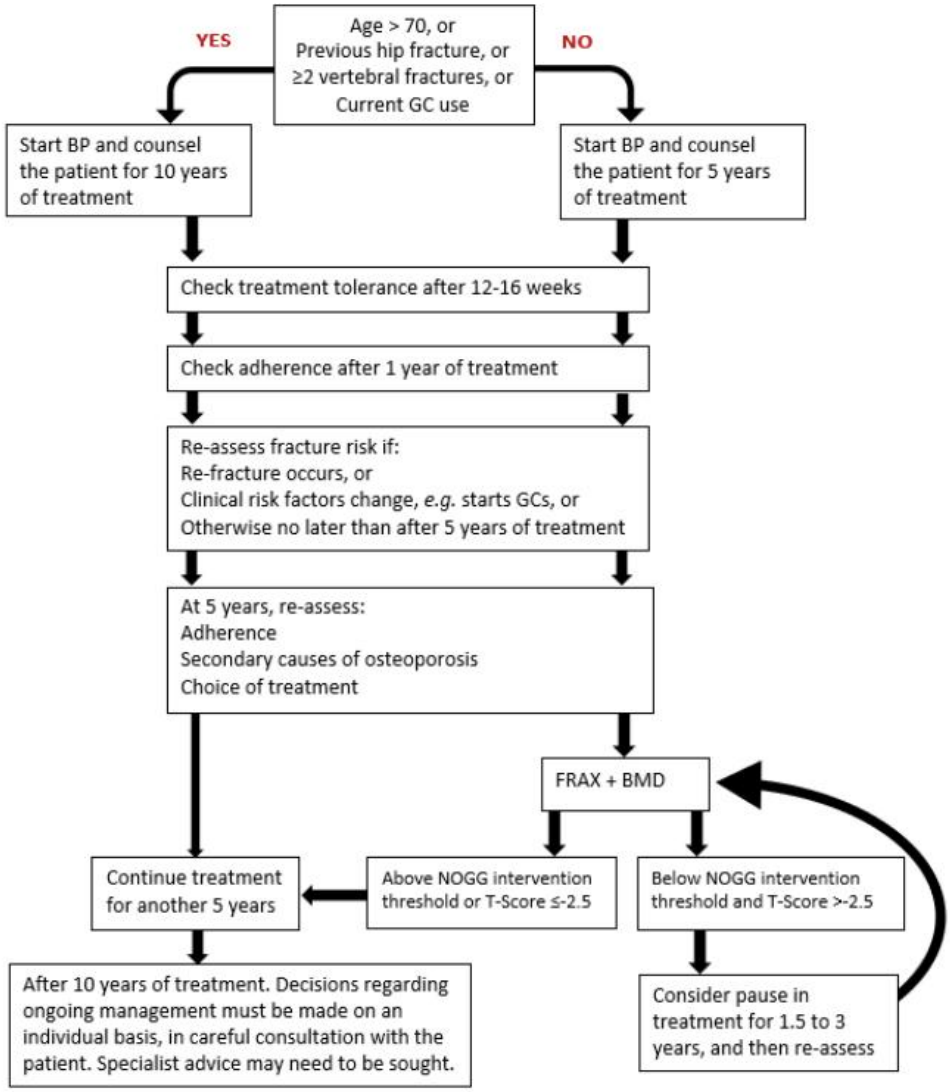
If a man aged 75 years or older has one or more independent clinical risk factors for fracture or indicators of low BMD has not previously had BMD measured, a DXA scan may not be required if the responsible clinician considers it to be clinically inappropriate or unfeasible.

DURATION OF THERAPY

Plan to prescribe oral bisphosphonates for at least 5 years, or intravenous bisphosphonates for at least 3 years and then re-assess fracture risk. Longer durations of treatment will be needed in those who are older

(age ≥70 years), have had a hip or vertebral fracture, are on high-dose oral glucocorticoids [≥7.5 mg/day of prednisolone or equivalent over 3 months], or have a further fragility fracture during osteoporosis treatment. In lower risk patients, a temporary treatment pause of 18 to 36 months can be considered after 5 years' oral bisphosphonate or 3 years' intravenous bisphosphonate.[7]

Oral Bisphosphonates: Clinical Flowchart for long term treatment and monitoring[7]



GC: Glucocorticoids (oral ≥7.5 mg prednisolone/day or equivalent). BP: bisphosphonate

Following, a treatment cycle patient should pause for 1.5-3 years and then either restart anti-osteoporosis therapy or have a repeat DXA and re-assessment of fracture risk. Patients who fracture whilst on anti-osteoporosis therapy require re-assessment and consideration of switching anti-osteoporosis therapy.

Patients on denosumab should only stop their denosumab after discussion with a specialist bone team as there is a higher risk of vertebral fracture if this drug is suspended.

Both anabolic agents have fixed treatment durations (teriparatide=24 months, abaloparatide=18 months and romosozumab=12 months) and should be followed by an anti-resorptive medication as part of a sequence of therapy.

References

[1] NICE Osteoporosis: assessing the risk of fragility fracture Clinical guideline Reference number: CG146 https://www.nice.org.uk/guidance/cg146

[2] NICE Osteoporosis Quality standard Reference number: QS149 https://www.nice.org.uk/guidance/qs149
[3] NICE Bisphosphonates for treating osteoporosis Technology appraisal guidance Reference number: TA464 https://www.nice.org.uk/guidance/ta464
[4] NICE Romosozumab for treating severe osteoporosis Technology appraisal guidance Reference number: TA791 https://www.nice.org.uk/guidance/ta791/chapter/1-Recommendations
[5] NICE Denosumab for the prevention of osteoporotic fractures in postmenopausal women Technology appraisal guidance Reference number: TA204 https://www.nice.org.uk/guidance/ta204
[6] NICE Raloxifene and teriparatide for the secondary prevention of osteoporotic fragility fractures in postmenopausal women Technology appraisal guidance Reference number: TA161 https://www.nice.org.uk/guidance/ta161
[7] NOGG 2024 Clinical guideline for the prevention and treatment of osteoporosis, available online: https://www.nogg.org.uk/full-guideline
[8] SPC EVENITY 105 mg solution for injection in pre-filled pen https://www.medicines.org.uk/emc/product/10956/smpc
[9] Saag KG, Petersen J, Brandi ML, et al. Romosozumab or Alendronate for Fracture Prevention in Women with Osteoporosis. The New England journal of medicine 2017;377(15):1417-27. doi: 10.1056/NEJMoa1708322
[10] NICE Abaloparatide for treating osteoporosis after menopause Technology appraisal guidance Reference number:TA991 https://www.nice.org.uk/guidance/ta991