



Case studies: Managing osteoporosis in the very elderly

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Case 1

- Betty
- 89 year old lady with hypertension and osteoarthritis
- Slipped on wet floor
- Presents to ED after a fall



Case 1: Older People are Complex!

- Betty
- 89 year old lady with dementia, hypertension, ischaemic heart disease, type 2 diabetes, CKD and osteoarthritis
- 3 falls in the last 4 months
- Presents to ED after another fall complicated by a long lie



Falls and Osteoporosis risk factors

- Visual impairment
- Hearing impairment
- 4+ medications
- OA
- Neurological disease
- Dementia
- Muscle wasting
- Low BMI
- Walking aids
- Previous falls
- Previous fragility fracture
- Post menopausal female
- Diabetes mellitus
- Rheumatoid arthritis
- Family history of osteoporosis
- Parental hip fracture
- Smoking
- Alcohol
- Steroid therapy

Case 2

- 91 year old man
- Known Parkinson's disease
- Was mobilising with his stick in the garden. Stepped into the living room, and tripped on the step
- Landed on his left hip
- Unable to get up or weight bear after the fall
- Used pendant alarm
- No reports of chest pain, palpitation or SOB at time of event
- No LOC



Case 2

- Medical background
 - Urinary retention
 - PMR (polymyalgia rheumatica)
 - Prostatism
 - Hypertension
 - Raynaud's syndrome
 - Obesity
 - CCF (congestive cardiac failure)

Case 2

- Medication history
 - Furosemide 40mg OD
 - Sertraline 50mg OD
 - Calcichew D3-Forte 2 tablets OD
 - Sodium docusate 100mg caps 2 tablets BD
 - Sinemet CR 25mg/110mg 2 tablets QDS
 - Sinemet Plus 25mg/100mg 1 tablet BD

Examination

- BP 100/56 mmHg
- Pulse 69 regular
- Temp 36.5 °C (Tympanic)
- Resp rate 15 /min
- SpO2 93%
- No anaemia
- AMT4 $\frac{3}{4}$ (age incorrect)
- Normal cardiovascular / respiratory and abdominal examinations
- No resting tremor / rigidity



FRAX

Country: **UK**

Name/ID:

[About the risk factors](#)

Questionnaire:

1. Age (between 40 and 90 years) or Date of Birth

Age:

Date of Birth:

Y:

M:

D:

2. Sex

Male Female

3. Weight (kg)

4. Height (cm)

5. Previous Fracture

No Yes

6. Parent Fractured Hip

No Yes

7. Current Smoking

No Yes

8. Glucocorticoids

No Yes

9. Rheumatoid arthritis

No Yes

10. Secondary osteoporosis

No Yes

11. Alcohol 3 or more units/day

No Yes

12. Femoral neck BMD (g/cm²)

Select BMD

Clear

Calculate

BMI: 28.5

The ten year probability of fracture (%)



without BMD

Major osteoporotic

13

Hip Fracture

7.8

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Limitations of FRAX

Country: **UK** Name/ID: [About the risk factors](#)

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Age: Y: M: D:

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12. Femoral neck BMD (g/cm²)

BMI: 28.5

The ten year probability of fracture (%) 

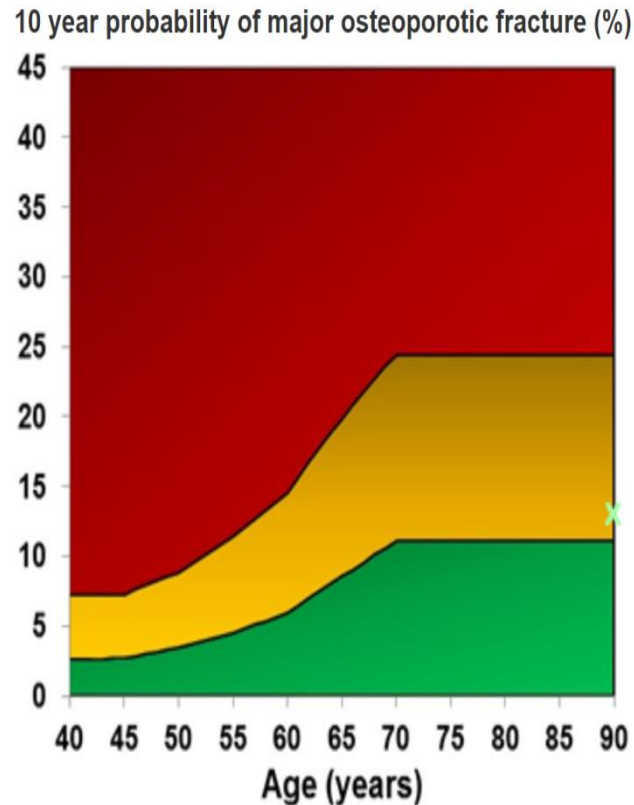
without BMD




Major osteoporotic	13
Hip Fracture	7.8

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NOGG

Assessment threshold - Major fracture



-  [Treat](#)
-  Measure BMD
-  Lifestyle advice and reassurance

If treatment is indicated, please click on the Treat item above to view guidance on related treatment options.

Case 3

- 99 year old lady living in a nursing home
- Found on the floor by carers. Unable to recall fall.
- Known to have advanced dementia, atrial fibrillation, IHD, previous stroke and macular degeneration.
- Fall resulted in a humeral fracture
- How will you manage this lady?

Conclusions

- Osteoporosis in old age continues to be underdiagnosed and undertreated
- Evidence for anti-fracture efficacy of osteoporosis treatments mainly comes from randomised controlled trials in postmenopausal women with a mean age of 70 – 75 years
- Oral bisphosphonates are difficult to take properly

Falls and Bone Health in Older Patients

- Main issues:
 - Gait problems
 - Poor strength
 - Poor balance
- Exercise can be as effective as multifactorial interventions in reducing the rate and risk of falls
- A pragmatic approach is often required to account for frailty, falls risk, adherence to treatment, potential side effects and life expectancy

