Clinical Pearls
clinical tips for daily practice

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Osteoporosis: Preventing the next fracture

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Clinical questions

- What is a fragility fracture, and what does it mean for the patient?
- In women over 65 who have a fragility fracture, how can we prevent future fractures?
- What are my resources?

Fragility fractures and osteoporosis

Low-impact or "fragility" fractures are defined as fractures caused by a degree of trauma not expected to cause a fracture, such as a fall from standing height or lower. Fragility fractures, such as vertebral compression fractures and distal forearm fractures, are common in the elderly, but they can occur at any age.

The occurrence of a fragility fracture is diagnostic for osteoporosis.

If you have not done so already, perform a DEXA scan to obtain a **baseline T score** for your patient with a fragility fracture. A post-fracture DEXA is not for diagnosis but rather for future comparison and monitoring of treatment progress.

Recommendations

To help prevent another fracture, discuss the following approaches with your patient:

Fall prevention

"The best way to prevent fracture is not to fall!" This statement may seem obvious, but it is still valuable to say out loud to every newly diagnosed osteoporosis patient.

- Discuss fall prevention strategies with your patient. Tools include the Home Fall Prevention and Safety Checklist, Preventing falls in your home, and the KP Washington Health Research Institute article "10 things you can do to prevent devastating falls."
- Encourage patients to take their time when ambulating outside, especially around the curb and on rainy days.
- Encourage patients to use a walker or cane if they are unsteady.
- If appropriate, assess your patient for unhealthy alcohol use. Also assess for polypharmacy, including any medications that may cause sedation, dizziness or drowsiness.

If your patient has frequent falls, consider Physical Therapy referral to develop a personalized plan for improving balance and strength. Don't exclude patients who reside in a nursing home or similar setting- they can also benefit from PT services.

Conservative management: calcium, vitamin D, and exercise

- Calcium 1200 mg a day in two divided doses; the body can only absorb about 600–800 mg elemental calcium in one sitting. Calcium carbonate is best absorbed when taken after meals. For patients on acid-reducing agents like PPI or antacid, calcium citrate is the preferred form, as calcium carbonate needs acidity in the stomach to be absorbed.
- Vitamin D 1000–2000 IU a day (2000 IU a day in cloudier months of the year) for maintenance dose.

- Calcium and vitamin D supplements are available OTC or at the KPWA Pharmacy.
- Weight-bearing exercises are good for bone health.

Medication management

Oral bisphosphonate therapy significantly reduces the risk of vertebral and non-vertebral fractures and remains the first-line treatment for osteoporosis.

Counsel patients that:

- Fractures can have a tremendous negative impact on a patient's quality of life.
- Adverse events like osteonecrosis of the jaw (ONJ) and atypical femur fracture occur only rarely (Khosla 2012, Lorentzon 2019, Ulmner 2014).
- The benefits of bisphosphonates outweigh their potential risks (Khosla 2012, Lorentzon 2019).

When starting patients on bisphosphonate therapy:

- To ensure absorption, advise the patient to take oral bisphosphonates with water only and not with food or other medications.
- Optimize 25 OH vitamin D > 30 and ensure that hypocalcemia is not present.
- Consider trying an alternative bisphosphonate if the patient is intolerant. For example, if the patient is intolerant of alendronate, try risedronate. Some patients tolerate one better than the other.
- If the patient has GI intolerance with oral bisphosphonates, switch to IV zoledronic acid. If the patient can't tolerate that option either, refer to Endocrinology to discuss denosumab (Prolia).
- Length of therapy (Black 2006):
    - Patients with a history of multiple fragility fractures, high risk of vertebral fractures, or a T score < -3.5 may benefit from up to 10 years of oral bisphosphonate or 6 years of IV bisphosphonate.
    - **Patients with mild or moderate osteoporosis and no fragility fracture on therapy can be considered for a *drug holiday* after 5 years of therapy.**

When to consult with Endocrinology

Consider an consultation with Endocrinology if:

- Patient has had 10 years of bisphosphonate and needs more therapy
- Patient with fragility fracture or osteoporosis has significant renal disease and may not be a candidate for bisphosphonate therapy
- Bisphosphonate therapy fails, as when a fracture occurs during active treatment
- Osteoporosis is unexplained, with no risk factors and negative workup
- Patient is intolerant of bisphosphonate therapy
- Patient needs anabolic therapy (Forteo) because of multiple compression fracture, severe osteoporosis, treatment failure

Why did we choose this topic?

- **Fewer than 1 in 4 women 67 years and older with osteoporosis-related fracture undergo DEXA or start osteoporosis medication** (AACE 2016).
- Post-fracture follow-up (DEXA or medications within 6 months of fracture) is a **Medicare Star quality measure:**

  Osteoporosis Management in Women Who Had a Fracture
  Percentage of women aged 67–85 years who suffered a fracture (excluding fracture of a finger, toe, face, or skull) and within 6 months of the fracture:
    - Underwent a DEXA scan, or
    - Filled a prescription for one of the following medications:

Bisphosphonates	**Other agents**
Alendronate	Calcitonin
Alendronate-cholecalciferol	Denosumab
Ibandronate	Raloxifene
Risedronate	Teriparatide
Zoledronic acid	

Resources

KPWA Post-Fracture Outreach Team
Contact Alison.K.Meyer@kp.org, fracture follow-up ARNP, for clinical questions regarding osteoporosis and/or your patient who has sustained a fracture.

Mayo Clinic Osteoporosis Decision Aid
https://shareddecisions.mayoclinic.org/decision-aid-information/decision-aids-for-chronic-disease/other-decision-aids/

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Kaiser Permanente Washington Osteoporosis Guideline

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