Survivorship – Breast Cancer: Bone Health

Disclaimer: *This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson's specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient's care. This algorithm should not be used to treat pregnant women.*

PRESENTATION

- Post-menopausal women
- Pre-menopausal on tamoxifen or GnRH
- Women on aromatase inhibitors

→ Baseline BMD
- 25-OH vitamin D[1]
- Evaluate for new low impact fracture

TREATMENT

25-OH Vitamin D normal (≥ 30 ng/mL) and BMD normal (T-score ≥ -1.0) and no new low impact fracture →
- Repeat tests in 2 years **and**
- Reinforce universal recommendations[2]

25-OH Vitamin D abnormal (< 30 ng/mL) → **A**
- Ergocalciferol 50,000 IU once a week for 8 weeks, then continue once a month, **or**
- Over the counter vitamin D3 1,000-2,000 IU daily and
- Recheck vitamin D, calcium, and albumin on the next visit and
- Reinforce universal recommendations[2]

BMD abnormal[3] (T-score < -1.0 to -2.4) and any vitamin D level and no new low impact fracture →
- Reinforce universal recommendations[2] **and**
- Repeat DXA every 1-2 years **and**
- Consider medical therapy or referral to bone health specialist based on risk factors (assess by FRAX[4])

BMD abnormal[3] (T-score ≤ -2.5) and any vitamin D level[5] and no new low impact fracture →
- Start bisphosphonates:
  - Alendronate 70 mg po weekly, **or**
  - Risedronate 35 mg po weekly or 150 mg po monthly, **or**
  - Ibandronate 150 mg po monthly or 3 mg IV every 3 months, **or**
  - Zoledronic acid 5 mg IV once a year (use institutional order set) **or**
- Start denosumab at 60 mg subcutaneously every 6 months (use institutional order set) **or**
- Refer to bone health specialist **and**
- Reinforce universal recommendations[2]
  - If bone loss risks have changed significantly or major therapeutic intervention has been undertaken, obtain a 12 month follow up DXA

Any BMD with New low impact fracture →
- Start universal recommendations[2] **and**
- Refer to Bone Health Specialist

GnRH = Gonadotropin-releasing hormone
BMD = Bone Mineral Density
DXA = Dual-energy X-ray Absorptiometry
IU = International Units

[1] 25-hydroxyvitamin D, also know as 25-hydroxycholecalciferol, calcidiol or abbreviated as 25-OH Vitamin D, the main vitamin D metabolite circulating in plasma

[2] Universal recommendations:
- Elemental calcium 1,000 – 1,200 mg/day from all sources
- Avoid tobacco (see Tobacco Cessation algorithm)
- Vitamin D 800 – 1,000 IU/day
- Limit alcohol
- Weight-bearing/muscle - strengthening exercises (see Physical Activity algorithm)
- Limit caffeine

[3] Abnormal BMD: Osteopenia, T-score between -1.0 and -2.4; Osteoporosis, T-score ≤ -2.5

[4] FRAX® - Fracture Risk Assessment Tool at www.shef.ac.uk/frax

[5] If vitamin D level is < 26 ng/mL, replenish with supplementation prior to initiating medical therapy for osteoporosis. See Box A for recommendation on vitamin D repletion.

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SUGGESTED READINGS

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