**Survivorship – Breast Cancer: Bone Health**

**PRESENTATION**

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

- Baseline BMD
- 25-OH vitamin D1
- Inquiry of new osteoporotic fractures (low impact)

**TREATMENT**

- Repeat tests in 2 years and
- Reinforce universal recommendations

- Ergocalciferol 50,000 IU once weekly for 8-12 weeks, then switch to over the counter vitamin D3 1,000-2,000 IU daily to maintain vitamin D1 level at 30-50 ng/mL or
- Over the counter vitamin D3 1,000-2,000 IU daily and
- Recheck 25-OH vitamin D1, calcium, and albumin on the next visit and
- Reinforce universal recommendations

- Start universal recommendations and
- Refer to bone health specialist based on risk factors (assess by FRAX®)

- Recommend medical therapy or referral to bone health specialist based on risk factors

- BMD abnormal (T-score ≤ -2.5) and any vitamin D1 level 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

- Any BMD with new low impact fracture

- Start universal recommendations and
- Refer to Bone Health Specialist

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**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.

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25-OH Vitamin D1 normal (≥ 30 ng/mL) and BMD normal (T-score ≥ -1.0) and no new low impact fracture

25-OH Vitamin D1 abnormal (< 30 ng/mL) and BMD abnormal (T-score < -1.0 to -2.4) and any vitamin D1 level and no new low impact fracture

BMD abnormal (T-score ≤ -2.5) and any vitamin D1 level and no new low impact fracture

Any BMD with new low impact fracture

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

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

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

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

If vitamin D level is < 30 ng/mL, replenish with supplementation prior to initiating medical therapy for osteoporosis. See Box A for recommendation on vitamin D repletion.
SUGGESTED READINGS


The DIPART (Vitamin D Individual Patient Analysis of Randomized Trials) Group. (2010). Patient level pooled analysis of 68 500 patients from seven major vitamin D fracture trials in US and Europe. BMJ, 340(7738), b5463. doi:10.1136/bmj.b5463

This survivorship algorithm is based on majority expert opinion of the Breast Survivorship work group at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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