DEXA & FRAX Scores

FLAME LECTURE: 52
LINU 8.20.19
LEARNING OBJECTIVES

- To understand the use of DEXA scan
- To describe FRAX score

Prerequisites:
- FLAME LECTURE 48: Overview of Osteopenia/Osteoporosis
- See also – for closely related topics
- Other FLAMEs on Osteoporosis
DEXA SCAN

- **DEXA** = Dual Energy X-ray absorptiometry
  - DXA scanner produces two x-ray beams; one high energy and one low energy
  - The machine measures the amounts of x-rays that pass through the bone from each beam
  - Based on the difference between the beams, the bone density can be measured
WHO SHOULD GET A DEXA?

USPSTF GUIDELINES

- Women Ages 65 or older (Grade B)
- Postmenopausal women <65 y at increased risk of osteoporosis (Grade B)
COMPONENTS OF THE DEXA

T-score: score compared with a 30-year old (when bone is the strongest)
-1.0 or above = normal
-1.0 to -2.5 = osteopenia
-2.5 or lower = osteoporosis

Z-score: score compared to a person of the same age and body size
FRAX SCORE

- Developed by WHO
- The DEXA can only give you an idea of how much weaker a patient’s bones have become. The FRAX score helps estimate the risk
- Can be used to guide treatment
  - Treat if >20% risk of major osteoporotic fracture or >3% risk of hip fracture
- Can be used for screening if patient is <65 years
  - If FRAX score >8.4%, screen for Osteoporosis
FRAX SCORE

- Estimates 10-year fracture risk based on DEXA results and 12 other risk factors
  - Age: bone loss worsens with age
  - Sex: women are at higher risk than men
  - Weight: low weight increases risk
  - Height: BMI can also evaluate frailty vs. overweight
  - Smoking or drinking history
FRAX SCORE

- Estimates 10-year fracture risk based on DEXA results and other 12 risk factors
  - Previous fracture history
  - Family history of hip fracture
  - Glucocorticoids: can interfere with new bone formation
  - Rheumatoid arthritis: higher risk of osteoporosis
  - Secondary osteoporosis: includes conditions related to osteoporosis like T1DM, hyperthyroidism, chronic liver disease, premature menopause
REFERENCES / IMPORTANT LINKS

- https://www.nof.org/patients/diagnosis-information/bone-density-examtesting/