PRIMARY CARE OSTEOSHOROSIS PREVENTION AND SCREENING

Jeremy R. Flowers
MSN RN FNP-BC GNP-BC WHNP-BC CUNP CNOR
Doctor of Nursing Practice Program
Chamberlain College of Nursing
This program has been developed solely for the purposes of describing the level of nurse practitioner (NP) knowledge and best practices regarding osteoporosis, before and after participation in an online educational intervention with a one-month practice-change follow-up. The program is posted as a part of this project’s educational intervention and is intended only for such use. The study has been approved for this purpose by the Chamberlain College of Nursing Institutional Review Board. Please find the link to return to the survey at the end of the slides.
OBJECTIVES

By the conclusion of this presentation, participants will be able to:

1. Describe knowledge relating to assessment, treatment, and management of osteoporosis
2. Discern best practices relating to assessment, treatment, and management of osteoporosis
3. Identify potential for improved practice-change relating to assessment, treatment, and management of osteoporosis
A large volume of evidence has emerged in recent years that supports the efficacy of osteoporosis screening (Davisson et al., 2009; Lynn et al., 2007; USPTF, 2011). Moreover, a number of strategies to promote osteoporosis screening have recently been identified (DeJesus et al., 2010; McAdam-Marx et al., 2012; Pickhardt et al., 2013). With best practices for the prevention and treatment of osteoporosis better defined (Anders, Turner, & Wallace, 2007; Jimenez-Nunez et al., 2013), increased attention must be now given to education of providers to increase knowledge and improve practice and patient outcomes (Ailinger et al., 2005; Ailinger, Lasus, & Braun, 2003; Zhang & Chandran, 2011).
OSTEOPOROSIS

- Chronic condition that results from low bone density and poor bone quality.
- Increased risk of fractures, death and requiring placement in nursing homes after fractures.
- It is estimated that there are 1.5 million people experiencing an osteoporotic fracture every year.
PRIMARY OSTEOPOROSIS

- Usual disease of older adults
- Caused by impact of changed to bone structure and bone loss
- More common in women after menopause
- Affect both sexes
SECONDARY OSTEOPOROSIS

- Caused by another condition or use of some medications
- Causes can include genetic disorders, endocrine disorders, GI diseases, autoimmune disease and several medications
- Medications that can cause secondary osteoporosis are glucocorticoids, lithium, thyroid replacement, and anticonvulsants
Patients are not having screening

- However almost half of Medicare beneficiaries have never undergone screening (King & Fiorentino, 2011).
- Over 80% of patients with a major osteoporotic fracture have never had bone mineral density testing or pharmacotherapy for treatment (Pickhardt et al., 2013).
- Screening for osteoporosis reduces risks of fractures by at least 25% and increases likelihood of starting appropriate treatment, with treatment fracture risks are reduced up to 50% (Powell, O’Connor & Greenberg, 2012).
RECOMMENDED SCREENING

- United States Preventative Service Task Force recommends screening for all women older than 65 years of age.
- National Osteoporosis Foundation recommends screening all women 65 and older, men 70 and older, and all patients who experience a fragility fracture.
Height loss- Height loss greater than 1.5 cm has a sensitivity of 58% and specificity of 61% for detecting vertebral compression fractures (Bennani et al, 2009).

Body mass index less than 19 kg/m^2 has a strong association with low bone mineral density (Asomaning, Bertone-Johnson, Nasca, Hooven & Pewkow, 2006).
Gold standard diagnosis of osteoporosis is use of dual energy x-ray absorptiometry (DEXA testing). DEXA is recommended for monitoring response to treatment.

Testing methods have been used including quantitative ultrasound, (Nayak et al, 2006). nuclear medicine, quantitative computerized tomography, and single photon absorptiometry.

Quantitative ultrasound is an accepted screening strategy but not recommended for disease monitoring.
The traditional value used to diagnose osteoporosis

World Health organization has developed guidelines based upon bone mineral density of healthy young adult.

-2.5 or more is osteoporosis

-1.0—2.5 is osteopenic

-1.0 and above is normal bone density
FRAX (Fracture Risk Assessment Tool) Developed by World Health Organization. Used to estimate a patient's 10-year fracture risk.
Free for use at www.shef.ac.uk/FRAX/
Unites states preventative task force recommends a fracture risk threshold of 9.3% for early DEXA testing (USPSTF, 2011).
Multiple self assessment tools are available

- **Osteoporosis Self Assessment Tool**: Validated in Asian, Caucasian, women and men. Uses a simple formula based on age and weight.

- Using an OST index of 3 resulted in a sensitivity of 93%, specificity of 66%, positive predictive value of 33% and a negative predictive value of 98% (Adler, Tran & Petkov, 2003).
Vitamin D and Calcium supplementation has been shown to reduce fracture risk for patients with low dietary intake.

Before recommending supplemental calcium assessment of dietary intake is recommended (Coughlan & Dockery, 2014).
Appropriate physical activity is generally considered beneficial to patients.

Exercise programs can reduce fall risk (Patience, 2015). Weight bearing exercise can improve bone quality.
Multiple pharmacological treatment options are available.

Treatment should be individualized based on patient needs and conditions.

T score $<-2.5$ is usually an indicator for pharmacotherapy.

Bisphosphonates and raloxifene have the strongest evidence for treatment effectiveness (USPTF, 2011).
FOLLOW UP TESTING

- Ongoing clinical assessment of risks, diet and medication compliance is needed.
- Repeat DEXA testing in under two years is not recommended (USPSTF, 2011).


REFERENCES


- Patience, S. (2015). Promoting good bone health: how can we help?. *Nursing & Residential Care, 17*(2), 78-81
REFERENCES


Thank you for participating in this project! Please slowly drag your mouse over the live link below to activate and then click on the URL to return to the post-test (you may need to wait briefly for the link to connect):

https://www.surveymonkey.com/s/S2TSNYW