
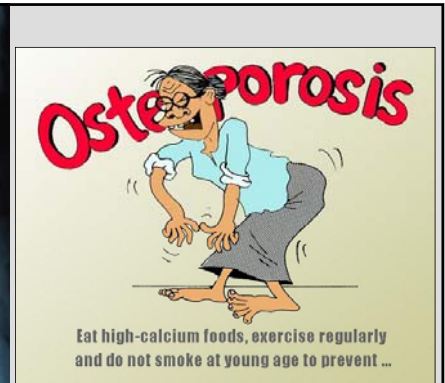


Osteoporosis

Examining the efficacy of hormone replacement therapy versus non-hormone replacement therapy in the prevention of vertebral fractures in post-menopausal women with osteoporosis

Katie Lee, PA-SII


Eat high-calcium foods, exercise regularly and do not smoke at young age to prevent ...



Background

- 10 million people diagnosed with osteoporosis
 - 80% are female
- Additional 18 million diagnosed with low bone mass
- In US alone, cost of this disease is estimated over \$10 billion
- Silent disease!


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Definition

- T-score
 - Normal BMD: -1.0 or greater T-score
 - Osteopenia: -1.0 to -2.5
 - Osteoporosis: -2.5 or lower

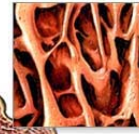
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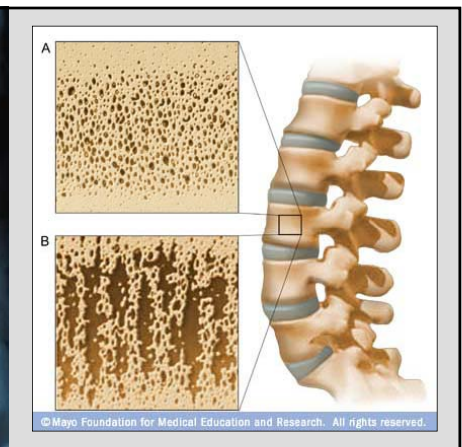
Normal



Osteoporosis



ADAM

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Risk Factors

- Female
- Caucasian or Asian race
- Low body weight
- Health Disorders
 - Hyperthyroidism
 - Diabetes mellitus
- Others:
 - Smoking
 - Steroid usage


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Treatment Options

- Calcium & vitamin D
- Bisphosphonates
- Estrogen & Progestin (Hormone Replacement Therapy)
- Selective Estrogen Reuptake Modulators
- Others: weight-bearing exercise, parathyroid hormone, calcitonin


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Studies

- Calcium & Vitamin D
 - increased BMD
 - no statistically significant findings of a reduction in incidence of fractures
- Bisphosphonates
 - increase in BMD
 - decrease in incidence of vertebral fractures.
 - Risedronate
 - reduces risk of vertebral fxs in women with *at least* 2 or more vertebral fxs
 - Lumbar spine BMD increased by 6% after 3 years of therapy


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Studies cont'd.

- Bisphosphonates:
 - Alendronate
 - decreased risk of vertebral fractures
 - BMD significantly increased in lumbar spine, total hip & femoral neck
- Estrogen & Progestin:
 - Significant reduction in risk of vertebral, hip & wrist fractures
 - BMD was shown to be improved at hip & lumbar spine


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Studies cont'd.

- Selective Estrogen Reuptake Modulators (SERMs):
 - beneficial effect on the frequency of vertebral fractures in women who did and did not already have a prevalent fracture.
 - BMD increased in femoral neck & vertebral column


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Conclusions

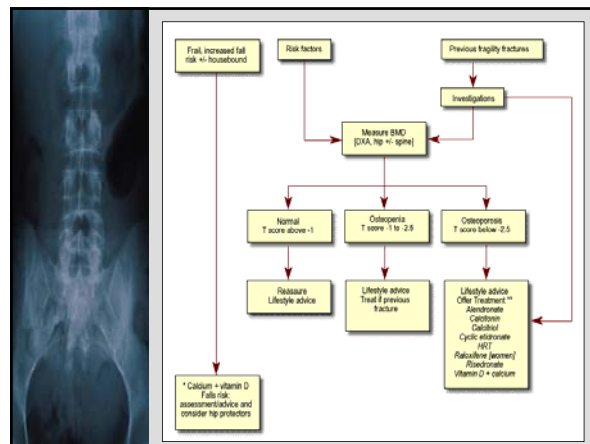

- Which Pharmacotherapy?
 - Tailored to each patient's individual need
 - Several showed efficacy with increased BMD of vertebral column and/or decrease risk of vertebral fractures
- Bisphosphonates & SERMs
 - prevention or treatment of fractures
- Calcium & vitamin D
 - effective, however the level of vitamin D that should be used in order to be considered effective is >800 IU

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Clinical Pearls

- Risk of fracture is predicted by each individual's risk factors & by T-score
- Identify each patient's needs
- Nonpharmacologic Therapy
 - Proper nutrition
 - Physical activity
 - Fracture prevention strategies
- Pharmacologic Therapy
 - Vitamin D supplement >400 IU/day
 - Calcium supplement 1000-1500 mg/day
 - Bisphosphonates
 - Beneficial in prevention of osteoporosis & in patients with established osteoporosis
 - SERMs
 - Beneficial in prevention of osteoporosis & in patients with established osteoporosis
 - HRT
 - Beneficial in women with established osteoporosis
 - Risk involved

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