PREScribing Exercise in Osteoporosis Management: The Osteobuild Experience

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Devastating impact of osteoporosis

Under-recognition of osteoporosis

Level of concern for osteoporosis is low

Medical support for osteoporosis is too low
1 out of 8 Europeans over the age of 50 will fracture their spines

By the year 2050 it is estimated that over one third of the European population will be over 60 years of age with the concomitant increase in the incidence of osteoporosis

Fractures of the hip are expected to double over the next 50 years. Between 2000-2003 the incidence of hip fractures in Malta was 15.34 per 10000 population
3.5 billion euro/year in hospital healthcare alone
  - Excludes outpatient and rehabilitation costs

500,000 hospital bed nights/year
  - Expected to double in the next 50 years with the ageing population
Recognizing Osteoporosis in a Clinical Setting

- Survey of recognition and treatment of osteoporosis-related vertebral fractures
- 934 hospitalized women 60+ years of age with chest x-rays
- Radiographs read by study radiologists
- Records examined for:
  - fracture
  - diagnosis of osteoporosis
  - treatments
Only 19% of women with a fracture received treatment

- Fracture identified by study radiologists: 132
- Fracture noted in radiology report: 65
- Fracture noted in medical record: 23
- Received osteoporosis treatment: 25

Total patients (n): 934
Treatment of Osteoporosis: Are Physicians Missing an Opportunity?

1162 W with a distal radial fracture, > 55 yrs (60% < 74 yrs)

- 33 (2.8%) had a bone density scan
- 266 (22.9%) were treated with at least one medication (estrogen, bisphosphonates, calcitonin)
- 173 (16.2%) of 1069 women filled prescriptions in response to the fracture
- 883 (76%) received neither a bone-density scan nor medical treatment of osteoporosis

Freedman KB et al., J. Bone and Joint Surg 2000;82-A:1063-70
### Hip Fracture vs. Stroke Mortality:

**Death Rates per 100,000 in Older Women**

<table>
<thead>
<tr>
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<th>Hip Fracture</th>
<th>Stroke</th>
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<td><strong>Sweden</strong></td>
<td>163</td>
<td>154</td>
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<tr>
<td><strong>Denmark</strong></td>
<td>135</td>
<td>180</td>
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<td><strong>Germany</strong></td>
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<td>190</td>
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- Hip fracture data: ages 80 to 84; ref: Heyse SP. *Osteoporosis Int* 1993; Suppl 1:S16-9
- Stroke data: ages 65-74; ref: Sans et al. *Eur Heart J* 1997; 18:1231-48
Undertreated Osteoporosis: What You Can Do?

- *Educate* Women on their risk
- *Lobby* Government Agencies/Public Health Policy Makers
- *Challenge* current physician attitudes toward treatment
- Create a *sense of urgency* among women and physicians
Prevention of osteoporosis

- Maximize bone mass
- Women attain their peak bone mass at around 20 and this gradually decreases till menopause when there is a sudden decrease of up to 5% per year.
- High intensity multidirectional activity
- Avoid excessive bed rest
- Daily calcium intake of 1.2g
Aim was to:

1) **Educate** patients who are at risk of fracture:
   - On osteoporosis
   - On proper nutrition
   - On how to exercise safely
   - Importance of perseverance and regular monitoring

2) Through exercise help increase bone mass, muscle strength and reduce falls
OSTEOBUILD

- 8 week programme
- Open to osteopenic and osteoporotic patients
- Pre participation medical examination with explanation of programme.
- Twice a week exercise regimen under strict supervision
- Two sessions with a nutritionist
**EXERCISE COMPONENT**

- Tailor made
- Involved gradual progression
- 1-1.5 hour duration
  - Warm up + stretching
  - Cardiovascular
  - Resistance training (ideally utilising free weights, body weight and terabands in combination multidirectional exercises i.e. exercise that can be done at home)
    - Vibro plate
    - Cool down + stretching
- Constant encouragement to undertake more exercise at home
Osteoporosis is under-diagnosed and under-treated

Untreated osteoporosis results in unnecessary pain and suffering, increased mortality and severe economic consequences

To make treatment routine, we need to educate government agencies, physicians, and women at risk of osteoporosis
“It's not my osteoporosis... I recently discovered slot machines!”
Thank you

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