Improving bone health management after cancer.


November 13th 2014
Growing numbers of survivors - 1 mln in Australia
Osteoporosis – a major health burden

• 1 in 3 women (1 in 5 men) over age of 50 will develop osteoporosis
  • 15000 women with breast cancer (3/4 of them are older than 50)
  • 20000 men with prostate cancer (majority older than 50)

• Breast and prostate cancer survivors are at increased risk of bone loss as a result of cancer treatment.
  • Breast on AIs – 2 x annual bone loss compared to general population
  • Prostate on ADT – 9 x annual bone loss compared to general population

• While assessment and management of bone loss after cancer is supported by multiple guidelines, there is no explicit agreement as to who should be responsible for care delivery and how to deliver coordinated care across multiple health care settings

• addressing bone health needs is one aspect of comprehensive care of survivors and could offer learning for other aspects of care
Osteoporosis in cancer survivors – challenges

• Invisible health problem
• Long lead time to fractures
• Limited expertise in cancer specialists
• Limited awareness in primary care
• Limited patients’ awareness of bone loss as an issue
• Limited reimbursement for testing and treatment
Objectives

• to develop an evidence-based model of care that ensures effective management of risk of bone loss after breast and prostate cancer, that can be then evaluated in a clinical trial.
Methods

• Review of existing guidelines
• An audit of clinical practice
• Feedback from health care providers (specialist and PCP)
• Conceptual model
<table>
<thead>
<tr>
<th>Who to screen</th>
<th>Assessment</th>
<th>General recommendation</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Society of Clinical Oncology</td>
<td>BMD for all women &gt;65 60-64 if Fx of fractures Wt &lt;70 Prior non traumatic fracture AI POF</td>
<td>Annual DEXA</td>
<td>T score ≤ -2.5 Prior fragility fracture</td>
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<td>Hillner B JCO 2003</td>
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<tr>
<td>National Comprehensive Cancer Network (US)</td>
<td>BMD and FRAX for any pts on therapy that included POF Adjuvant hormone therapy that interferes with estrogen Steroids</td>
<td>Biannual DEXA</td>
<td>T score ≤ -2.0</td>
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<tr>
<td>Gralow J J Nat Comp Ca Network 2009</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Hadji P Annals of Oncology 2011</td>
<td>Al</td>
<td>DEXA Every 1 – 2ys</td>
<td>T score ≤ -2.0 Or 2 of the following T score ≤ -1.5 Age &gt;65 Low BMD (&lt;20 kg/m2) Family hx hip fracture Personal hx fragility fracture &gt;50 yr Steroid use &gt;6 mo Smoking</td>
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<tr>
<td>European Society of Medical Oncology</td>
<td>? “patients at risk”</td>
<td>DEXA every 2 yrs</td>
<td>T score ≤ -2.0</td>
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<tr>
<td>Coleman Annals of Oncology 2014</td>
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<tr>
<td>Belgian Bone Club</td>
<td>All pts</td>
<td>DEXA every 1 -2 yrs</td>
<td>T score &lt; -2.5 or fragility fracture Or osteopenia and other risk factors</td>
</tr>
<tr>
<td>Body JJ Osteoporosis Int 2007</td>
<td></td>
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<tr>
<td>Cancer Australia 2011 (bisphosphonate use only)</td>
<td></td>
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<tr>
<td>Canada Agency for Healthcare Research and Quality</td>
<td>Al Premenopausal women with POF or OS treatment</td>
<td>DEXA and FRAX every 1 -3 yrs if moderate risk on FRAX</td>
<td>If prior fragility fracture of T score &lt; -2 on AI FRAX high risk of postmenopausal and moderate risk</td>
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<tr>
<td>2012</td>
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</table>
Effectiveness of bisphosphonates

• Multiple studies showing impact of bisphosphonates on BMD in cancer
  • Largest 1065 women ZO-FAST Eidtmann et al 2010
  • Few studies of impact of bisphosphonates on fracture rates
  • Cost effectiveness
    • annual screening and bisphosphonates if osteoporosis –$87,000/QALY (US)
      $55,000/QALY – UK data – no Australian data
    • Assumptions about impact on fracture rates

• Most bisphosphonates in general population have greater impact on vertebral than hip fractures and NNT <30 if osteoporosis and previous fractures but >100 if no osteoporosis or previous fractures
What is the clinical practice?

• Clinical audit of patients treated at Southern Adelaide Local Health Service from July 2011 – June 2012
• 42 women receiving hormonal treatment at Medical Oncology Unit
  • 14 on AIs – all DEXA
  • 28 on Tam – 9 DEXA
  • 4 osteoporosis, 11 osteopenia – 3 with osteoporosis treated with bisphosphonates
• 6 pts starting ADT (Urology) – no DEXAs
What do providers think?

• 18 breast cancer providers and 26 prostate cancer providers (9 and 15% RR)
  • Value bone health management but
    • Lack of time
    • Lack of training
    • Lack of reimbursement
    • Lack of clarify whose job it is

• GPs at the RACGP workshop
  • Not always aware of cancer impact on bone health
  • Consider management of bones their core business
  • Lack of reimbursement not a major issue
AIM

Screen
Baseline risk
- Ca
- Vit D
- BMD
- Family Hx
- Drugs
- Lifestyle
- $2^\circ$ causes

↓ disability due to bone loss
  • ↓ fracture rate
  - ↓ symptoms ie pain

Manage
- Ca
- Vit D
- lifestyle
- Drugs
- Treat $2^\circ$ causes

Screen
- Male hypogonadism
- Female hypogonadism if younger than 45 and lasting longer than 6 mo
- Minimal trauma fracture
- Previous low density at least 12 mo ago
- 70 yrs or over

Bisphosphonates if
- T <-3.0 and 70 or older
- Or T<2.5 and minimum trauma fracture

General population
↓ disability due to bone loss
- ↓ fracture rate
- ↓ symptoms ie pain

AIM

Screen
Baseline risk
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Cancer specific risk
- AI (2 x risk)
- ADT (9 x risk)

Manage
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- Modify cancer treatment

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Cancer
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**Manage**  
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**BARRIERS**  
**Not surprising**  
Awareness of evidence  
Value of evidence  
Role identity Skill Time  

**Challenging**  
Access to evidence  
Access to tests  
Access to treatments  

**Very challenging**  
Quality of evidence  
Feasibility of building more evidence
Questions

• Is the evidence sufficient to justify screening and treatment?
  • Effectiveness - NNT to prevent fractures
  • Cost effectiveness of treatment

• How feasible are the studies to improve the evidence?
  • Drugs are off patent and not reimbursed
  • Follow up long

• What do we do with guidelines that cannot be easily implemented?
  • What implications does it have on where survivorship care can be delivered?

• What can we learn about guideline development for the future?

• Is osteoporosis unique?
Way forward

• Consideration of implementation when planning guideline development
• Real life data to monitor clinically relevant events
  • No minimum data set for cancer survivors in Australia today!