

Improving bone health of cancer survivors – a complex implementation problem.

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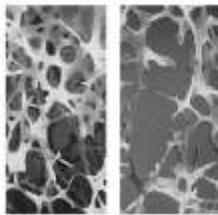


Osteoporosis – a major health burden

- 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

Objectives:

- To examine a barriers and potential enablers to delivery of bone health management to cancer survivors, and
- how these may impact on the implementation of evidence.



Methods:

- Evaluation of:
 - quality of evidence
 - cost effectiveness data
 - reimbursement
 - current practice patterns
- Stakeholder feedback

Evidence:

- 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
- Emerging evidence with newer drugs (denosumab)



Study/Source	Study Design	Intervention	Comparator	Recommendation	Evidence
American Society of Clinical Oncology (ASCO) 2003	RCT for all patients >65 (55-64 if fx of fractures)	Bisphosphonates	Ca, Vit D, Exercise, Stop smoking		T score < -2.5 Prior fragility fracture
National Comprehensive Cancer Network (NCCN) Guidelines v.1.1 Breast Cancer Network 2010	RCT and observational studies	Bisphosphonates	Ca, Vit D, Exercise, Stop smoking, Limit alcohol		T score < -2.0
ASCO 2011	RCT	Denosumab	Ca, Vit D, Exercise		T score < -2.0 Or 2 of the following: T score < -1.5 Age >65 Low BMD (T score < -2.0) Family hx of fracture Personal hx of fragility fracture >50 yr Serum calcium < 8.5 mg/dL Smoking
European Society of Medical Oncology (ESMO) Guidelines v.1.0 2014	Observational	Denosumab	Ca, Vit D, Exercise, Stop smoking, Limit alcohol		T score < -2.0 Or 2 of the following: T score < -1.5 Age >65 Family hx of fracture Personal hx of fragility fracture >50 yr Serum calcium < 8.5 mg/dL Smoking
Belgian Bone Club (BOC) 2007	Observational	Denosumab	Ca, Vit D		T score < -2.0 Or 2 of the following: T score < -1.5 Age >65 Family hx of fracture Personal hx of fragility fracture >50 yr Serum calcium < 8.5 mg/dL Smoking
Cancer Australia 2011 (Bisphosphonates)	Observational	Denosumab	Ca, Vit D, Exercise		Osteoporosis (or AI)
Canada Agency for Healthcare Research and Quality 2012	Observational	Denosumab	Ca, Vit D, Exercise		If prior fragility fracture of T score < -2.0 (AI) FRAX high risk of postmenopausal and otherwise risk

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



Providers views:

- ASBD, ANZUP
- 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



Barriers:

- **quality of evidence**
 - variability between different guidelines,
 - use of bone density as surrogates for fractures,
 - difficulty estimating effectiveness and cost effectiveness of interventions in the target population
- **access to evidence**
- **access to interventions**
 - bone density tests and bisphosphonate treatment
- **lack of consensus** among providers of who should be delivering care and how
- **lack of awareness**



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 - Longitudinal studies
 - Risk prediction tool update



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- Can we proceed with implementation of existing evidence?
 - Pilot of patient activation



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- Can we proceed with implementation of existing evidence?
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 - Link with other health needs of survivors



Conclusions

- Bone health management for cancer survivors presents a challenging problem of implementation barriers in a complex setting of care delivery.
- Successful delivery of survivorship care required multilevel strategies to address these barriers.

