Breast Radiotherapy

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BreastDocUK
National Audit shows variety in practice not aligned to comorbidity (Charlson)
- 43 deaths due to other causes
- 14 breast cancer related deaths
- 3 extra survivors due to bisphosphonates
- 6 extra survivors due to trastuzumab
- 8 extra survivors due to chemotherapy
- 26 survivors with surgery alone

https://breast.predict.nhs.uk/
Disease recurrence rate reduced by one half
Breast cancer death reduced by one sixth

Proportional benefits: “vary little between different groups of women”

Absolute benefits “vary substantially according to the characteristics of the patient”
**PRIME 2** study:
Ipsilateral breast recurrence at 5 years:

1.3% (0.2-2.3) vs 4.1% (2.4-5.7) p=0.002
“It is conceivable that in very select patients with HER2-positive breast cancer, systemic therapy is now sufficient treatment for both local as well as distant disease, potentially permitting safe de-escalation of local therapy.”
What harm?

Radiotherapy to breast does not impair Quality of Life in older patients

Williams, Kunkler PRIME Trial Health Technology Assessment 2011
Fractionation

START
50 Gy in 25# vs 40Gy in 15#

FAST
28.5Gy in 5# in 5 weeks

FAST FORWARD
28.5Gy in 5# in 5 days

TARGIT (IORT)
10Gy in 1#

Agrawal R et al FAST Trial Radiotherapy & Oncology 2011
Coombs BMJ Open 2016
Haviland Lancet 2013
Positive Sentinel Node

Axillary treatment
  • Lymphoedema
  • Impairment of shoulder function
  • Sensory changes and pain

POSNOC trial
  • Axillary treatment or not (surgery or RT)
  • 5 year axillary recurrence
  • Arm morbidity / QoL
Radiotherapy

- Relative benefits are constant and relate to biology
- Inversely proportional to age
- Absolute benefits often small
- Harms are low if best technology is used
- Hypofractionate when possible
- Randomise!