Lumpectomy plus tamoxifen with or without irradiation in women 70 years of age or older with early breast cancer: a report of further follow-up

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Background

- After lumpectomy for early breast cancer, adjuvant breast irradiation reduces local recurrence by about two-thirds. The EBCTCG overview has shown a survival benefit from adjuvant radiation, noting that for every 4 local recurrences that are prevented, 1 life will be saved.
- There may be a population of women that do not need adjuvant radiation as their risk of local recurrence is very low with lumpectomy alone, and competing causes of mortality could drown any survival benefit.
- This study (CALGB 9343 with RTOG, and ECOG) evaluated the impact of adjuvant radiation in women over 70 with small ER positive breast cancers treated with tamoxifen.
- The results from this study were reported after 5 years and showed that radiation decreased local recurrence, but the overall recurrence rate was very low.

Methods

- 636 women 70 year old and over with stage I breast cancer, ER positive treated with lumpectomy with negative margin (no tumor at inked margin).
- Randomized, phase III, multi-institutional cooperative group trial, two-arms:
  - Tamoxifen and radiation
  - Tamoxifen alone
- Endpoints:
  - Primary: time to locoregional recurrence, frequency of mastectomy for recurrence, breast cancer-specific mortality, time to distant metastasis and all-cause mortality.

Results

- Patients were stratified by age ≥75, axillary dissection
  - 63% did not have axillary dissection.
- The only significant difference between the groups was in locoregional recurrence:
  - 1% for TamRT, 7% for Tam, p<0.001.
  - There was one axillary recurrence in Tam arm, who also had a breast recurrence.
- The incidence of mastectomy was not significant
  - 1% for TamRT, 3% for Tam, p=0.59.
  - It is thought that this is due to the fact that some previously unirradiated women had a second lumpectomy with radiation instead of mastectomy.
- There was no difference in distant metastases, breast cancer specific mortality, or overall survival.
  - The majority of deaths were due to non-breast cancer causes (27% other vs. 2% breast).
**Author's Conclusions**

- Because there was no impact on breast conservation, the overall recurrence rate was very low, and mortality from other causes dominated breast cancer deaths, adjuvant radiation can be omitted in this narrowly selected subset of women.
- The results at 8.2 years verify the results reported at 5 years.

**Clinical/Scientific Implications**

- The relative decrease in local recurrence with radiation was similar in this trial compared to what has been seen in other study population. Because these patients were highly selected (older, small tumors, ER+), the absolute recurrence rate and therefore the absolute benefit was low from adjuvant radiation.
- It is unclear how this trial was powered. It certainly was not powered as an equivalency trial for overall survival, and the lack of difference in survival is likely a result of being underpowered.
- These results are important when counseling older breast cancer patients with favorable tumors regarding their options. Physiologic age as well as chronologic age should be considered as well as the patient's tolerance of accepting an increased rate of recurrence to avoid radiation, even if it may not impact breast conservation or survival.