Breast cancer survivors:
A comprehensive examination of multiple primary malignancies comparing risk in younger and older women over 20-years of follow-up

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Background
• Breast cancer is the most frequently diagnosed cancer in women in USA
• Relative breast cancer survival rates are high in USA (>89% at five-years)
• Vast majority of women with breast cancer become long-term survivors at risk for developing subsequent malignancies

Objective
• To examine incident multiple primary malignancies (MPM) in female breast cancer survivors over 20-years of follow-up

Methods
• Included 110,440 women from 12 Surveillance, Epidemiology and End Results (SEER) registry sites diagnosed 1/1/1986 – 31/12/1994 with 1st primary malignant breast cancer
• Followed-up for MPM (SEER definition) or death until 31/12/2006

Methods
• Analyses included:
  – age-specific descriptive characteristics
  – crude incidence rates
  – age-specific cumulative incidence rates
  – Cox proportional hazards regression models adjusted for socio-demographic characteristics, stage of 1st primary cancer, and risk for death as a competing outcome

Results
• For all age groups breast cancer was the most common first incident MPM
• Time in months to first incident MPM decreased considerably with age from 100.09±SD61.85 in women <65 years to 50.92±SD43.37 in those 80+ years
Results

- The risk of MPM varied by age but not by diagnosis year
- The crude 10-year MPM incidence rate was lower in younger survivors (11.7 per 10,000PY) and relatively constant across older age groups (16.7 per 10,000PY 65–69 years, 17.8 per 10,000PY 70-79 years, 16.4 per 10,000PY 80+ years)

Conclusions

- These findings suggest there are age-related differences in risk of developing an MPM after a primary breast cancer diagnosis, with the highest risk in women age 70-79 years
- No other MPM risk factors were identified in this SEER population of breast cancer survivors

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