

Morbidity of Breast Cancer as a Function of Screening Interval: Annual versus Biennial

Wednesday 12:15-12:45 PM | BR275-SD-WEA6 | BR Community, Learning Center, Station #6

PURPOSE

To compare breast cancer tumor characteristics and treatment regimens among women undergoing annual vs biennial screening mammography.

METHOD AND MATERIALS

This IRB-approved, HIPAA compliant retrospective study was performed at an NCI-Designated Cancer Center. Query of a breast imaging database yielded 490 consecutive patients diagnosed with breast cancer during 2016 and 2017. Of these, 232 were women aged 40-84 years undergoing annual or biennial screening with mammographically or clinically detected cancer. Annual screening was defined as 9-15 months; biennial screening as 21-27 months. Records were reviewed for patient demographics, tumor characteristics, and treatment regimens. Comparison between annual and biennial screening cohorts was conducted using t-tests or Wilcoxon rank-sum test for continuous variables and chi square or Fisher's exact tests for categorical variables.

RESULTS

Mean age at cancer diagnosis among 232 patients was 62 + 10 years. 171/232 (74%) cancers were invasive. Screening frequency was annual in 200/232 (86%) patients and biennial in 32/232 (14%). There were no significant differences in baseline characteristics between annual and biennial groups, including age, menopausal status, hormone replacement use, high risk status, family history, or race. Annual screening resulted in fewer late stage presentations (AJCC Stage 2, 3, or 4) than biennial [annual 48/200 (24%) vs biennial 14/32 (44%); $p=0.02$] and fewer interval cancers [annual 21/200 (11%) vs biennial 12/32 (38%); $p<0.001$]. Biennial screening was associated with larger mean tumor size at presentation (annual 1.4 + 1.2 cm vs biennial 1.8 + 1.6 cm; $p=0.04$). There was a trend towards larger median tumor size in the biennial group (annual 1.1 cm, SD 1.2 cm; biennial 1.2 cm, SD 1.6 cm; $p=0.09$). Compared with annual screening, biennial screening showed a trend for greater use of ALND [annual 24/200 (12%) vs biennial 6/32 (19%)] and chemotherapy [annual 55/200 (28%) vs biennial 12/32 (38%)].

CONCLUSION

Most women received annual rather than biennial screening. Biennial mammographic screening was associated with greater frequency of advanced stage disease and interval cancer.

CLINICAL RELEVANCE/APPLICATION

Biennial screening was associated with advanced stage breast cancer compared with annual screening. These results may be helpful in decision-making regarding frequency of breast cancer screening.