First-Degree Family History Is Associated With Better Breast Cancer Prognosis

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Although a positive family history is a risk factor for developing breast cancer, whether family history has a unique relationship with prognosis remains an unresolved question.

A recent study conducted by Dr. Kathi Malone, Public Health Sciences Division, and colleagues at the Fred Hutchinson Cancer Research Center sheds light on the question of whether tumor characteristics and prognosis are different in women who may have an inherited predisposition to breast cancer.

In a population-based sample of 1260 women identified through the Cancer Surveillance System of Western Washington to have been diagnosed with a first primary, invasive breast cancer before age 45, women with a positive first-degree family history had a 40% reduction in risk of dying after breast cancer diagnosis compared to women with no family history. The presence of only a second-degree family history was unrelated to the risk of dying, but the risk of dying was lower in women with an increasing number of affected relatives.

The association between family history and risk of dying could not be attributed to significant differences in mammographic screening, disease stage, tumor size, nodal status, body mass index or treatment type; nor could it be ascribed to mutations in *BRCA1* and *BRCA2* since the results were relatively unchanged after excluding carriers. The tumors of women with a positive-family history were, however, more likely to be estrogen receptor-positive and less differentiated.

Since the majority of women with a positive family history of breast cancer do not carry *BRCA1/BRCA2* mutations, this study suggests there may be additional shared factors that influence risk of disease, tumor features and prognosis. Identifying such factors could be important to prognostication and treatment strategies.

Malone KE, Daling JR, Doody, DR, O'Brien C, Resler A, Ostrander EA, Porter PL. 2011. Family history of breast cancer in relation to tumor characteristics and mortality in a population-based study of young women with invasive breast cancer. *Cancer Epidemiology, Biomarkers & Prevention*, Epub ahead of print, doi: 10.1158/1055-9965.EPI-11-0781.