

***BRCA* Mutation Status Does Not Impact Survival Rates in Patients With Young-Onset Breast Cancer**

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January 22, 2018 – In patients with young-onset breast cancer, *BRCA1/2* mutation status does not affect overall survival at 2, 5, and 10 years, concluded a prospective cohort study conducted in the UK.

Ellen R. Copson and Tom C. Maishman from the University of Southampton, Southampton, UK and their colleagues published their findings in *Lancet Oncology* online on January 11, 2018.

BRCA1 and *BRCA2* mutation carriers have a well-established increased lifetime risk of breast cancer. Although *BRCA1/2* mutations are rare and account for a small fraction of breast cancers, a larger number of *BRCA1/2* mutation carriers than non-carriers account for women with young-onset breast cancer, a subgroup that is also associated with higher mortality.

In the Prospective Outcomes in Sporadic versus Hereditary (POSH) breast cancer study, the authors evaluated the prognostic implication of *BRCA1/2* mutation status on the survival outcomes of patients with young-onset breast cancer from 127 UK hospitals. Blood genotyping analysis detected pathogenic *BRCA1/2* mutations in 12% of the 2733 women with young-onset breast cancer (patients aged <40 years at first diagnosis of breast cancer) enrolled in the study.

The authors compared overall survival as the primary outcome for all *BRCA1/2* mutation carriers (*BRCA*-positive) and non-carriers (*BRCA*-negative) at 2, 5, and 10 years after diagnosis. They also analyzed survival in a patient subgroup with triple-negative breast cancer (estrogen receptor-negative, HER2-negative, progesterone receptor-negative/unknown).

Overall survival was not significantly different in *BRCA*-positive and *BRCA*-negative patients at any of the time points analyzed (hazard ratio [HR], 0.96 [95% CI, 0.76-1.22]; $p = 0.76$). In the subgroup of patients with triple-negative breast cancer, overall survival was better in *BRCA*-positive than in *BRCA*-negative patients at 2 years (HR, 0.59 [95% CI, 0.35-0.99]; $p = 0.047$), but not at 5 or 10 years.

The authors concluded that *BRCA1/2* mutation status did not impact overall survival in patients aged 18 to 40 years with breast cancer, after adjustment for known prognostic factors. The authors noted that although “*BRCA*-positive young-onset breast cancer patients are frequently offered additional management options including bilateral mastectomy,” in the POSH study, improved survival was not observed with immediate bilateral mastectomy.

Dr. Copson and her colleagues concluded that “patients who choose to delay additional surgery for 1 or 2 years until they are psychologically and physically recovered from their cancer

treatment can be reassured that this choice is unlikely to lead to any substantial survival disadvantage.”

“Decisions about timing of risk-reducing surgery should take into account primary tumor prognosis and patient preference,” reiterated the authors.

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