Racial Factor Affirmed in Breast Ca Outcomes

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CHICAGO — African American women with breast cancer have less-favorable outcomes than white women even after differences in socioeconomic status are minimized, new research suggests.

The study included 96 self-described African American and 304 white women with invasive breast cancer who enrolled from 2001 to 2007 in the Clinical Breast Care Project, which provides women equal access to health care and standardized treatment through the U.S. Department of Defense.

With a median follow-up of 51 months (range 12-82 months), disease-free and overall survival rates were significantly lower for African American women (78%), compared with white women (93%), Rachel Ellsworth, Ph.D., and her associates reported in a poster at a symposium sponsored by the Society of Surgical Oncology.

The mortality rate was 5% for African American women and 1% for white women. The average age at diagnosis was significantly lower in African American women, with 15% diagnosed before age 40, compared with 4% of white women.

Stage at diagnosis did not differ significantly between the African American and white groups (stage I: 48% vs. 54%, respectively; stage II: 31% vs. 32%; stage III: 13% vs. 11%; and stage IV: 8% vs. 3%).

And although positive lymph nodes were identified more often in African American (43%) women than in white women (38%), the difference did not reach statistical significance, reported Dr. Ellsworth, director of translational breast genomics, Clinical Breast Care Project, Windber (Pa.) Research Institute.

Tumors from African American women were significantly more likely to be "triple negative," or to test negative for estrogen receptor (ER), progesterone receptor, and the human epidermal growth factor receptor 2 (29% vs. 9% for white women). Triple-negative tumors do not respond to any form of endocrine therapy and are associated with a survival disadvantage.

In addition, breast tumors from African American women were significantly more likely than those from white women to have the BRCA1-like phenotype (24% vs. 5%, respectively). "These data suggest that the differences in breast tumor phenotype and clinical outcomes are molecular in nature," the investigators wrote.

Many studies have used the higher stage at diagnosis to support the idea that survival differences are socioeconomic, Dr. Ellsworth said in an interview. However, stage at diagnosis did not differ significantly between the two groups in the current study, yet the mortality rates for the African American women continued to be worse. In addition, the pathological characteristics of their tumors were more aggressive.

"While some hold that factors such as ER status can be driven by poverty, we believe that high-grade, triple-negative, BRCA1-like characteristics are driven by molecular differences," Dr. Ellsworth said. "We have performed gene expression analysis on both tumor and disease-free breast tissue in African American and [white] women and have found genes differentially expressed between ethnic groups. Thus, we believe this data strongly suggests that differences in tumor phenotype are driven by genetic differences."

When asked whether enough evidence has accrued to settle the biology-versus-environment question, Dr. Ellsworth said, "There will always be individuals who will say that socioeconomic status does influence your tumor cell biology."

At baseline, there were no significant differences between the African American and white women enrolled in the study in terms of use of screening mammography (99% vs. 98%, respectively), any comorbidity (79% vs. 85%), first parity at age 30 or younger (82% vs. 81%), menarche before age 13 (51% vs. 48%), ever having smoked (67% vs. 55%), body mass index greater than 25 kg/m^2 (69% vs. 59%), and overall education levels, with 52% of both groups reporting post–high school education.

However, a significantly higher proportion of African Americans reported that they performed monthly breast self-exams (76% vs. 59%), used oral contraceptives (82% vs. 63%), and had high fat intake defined by a score of more than 24 on the Fat Intake Scale (92% vs. 76%).

A lower proportion breast-fed (37% vs. 51%), used hormone replacement therapy (42% vs. 57%), or consumed more than 500 mg/day of caffeine (40% vs. 68%), Dr. Ellsworth and associates wrote. ■