Anthracyclines Improve Survival in HER2-Positive Breast Cancer Patients

Treatment with the class of chemotherapy drugs called anthracyclines improves survival in women with HER2-positive breast cancer who have previously had surgery, but it may not offer any benefit for women with HER2-negative tumors, according to a study published online December 25 in the *Journal of the National Cancer Institute*.

Randomized clinical trials have demonstrated that treating early breast cancer with anthracycline-based chemotherapy improves disease-free and overall survival rates more than non-anthracycline-based regimens. However, the studies have demonstrated that anthracyclines may slightly increase the risk of heart damage and leukemia. Given these side effects, the greatest benefit of these regimens may be in women with breast tumors that overexpress HER2—a gene that is often amplified in tumors that respond to anthracyclines.

Alessandra Gennari, M.D., Ph.D., of the National Cancer Research Institute in Genoa, Italy, and colleagues compiled data from eight randomized controlled trials that compared anthracyclines and non-anthracyclines, and also reported HER2 status. Almost 30 percent of the patients’ tumors overexpressed HER2.

Overall and among patients with HER2-positive tumors, anthracycline-based chemotherapy produced a greater reduction in the risk of relapse or death than non-anthracycline-based regimens. However, among patients with HER2-negative tumors, there was no difference in survival between the chemotherapy regimens.

“The absence...of any effect of anthracyclines observed in patients with HER2-negative disease suggests that this group of patients could be spared unnecessary toxic effects related to the use of this class of agents and raises questions as to the appropriateness of control arms in randomized clinical trials in which anthracycline-based regimens are used in unselected patient populations,” the authors write.

In an accompanying editorial, Soonmyung Paik, M.D., of the National Surgical Adjuvant Breast and Bowel Project in Pittsburgh and colleagues point out that HER2 status alone may not be enough to determine who should receive anthracyclines, given the molecular differences among different subtypes of breast cancer.

“Optimization of adjuvant chemotherapy for patients diagnosed with breast cancer will depend on defining the baseline prognosis and chemosensitivity of each subclass of breast cancer beyond those crudely defined by HER2 status alone,” the editorialists write.

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