'Chemobrain' Not Seen in Breast Cancer Therapy

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CHICAGO — Chemotherapy-related cognitive impairment was infrequent in a small study of 30 patients who underwent adjuvant chemotherapy for nonmetastatic breast cancer.

"People could be making decisions about whether or not to have chemotherapy based on stories they've heard about 'chemofog' or 'chemobrain,' " said Dr. David G. Darby, "We hope this information will help people make informed decisions."

Dr. Darby and his colleagues looked at a total of 30 women who had already undergone either lumpectomy or mastectomy and were scheduled to undergo either the chemotherapy regimen known as AC (n = 15) or CEF or CMF regimens (n = 15).

► The AC regimen involves doxorubicin 60 mg/m^2 and cyclophosphamide 600 mg/m^2 intravenously, repeated every 21 days for a total of four cycles.

► The CEF regimen involves cyclophosphamide administered orally in doses of 75 mg/m^2 on days 1-14; epirubicin 60 mg/m^2 by IV on days 1 and 8; and 5-fluorouracil 500 mg/m^2 by IV on days 1 and 8, repeated every 28 days for six cycles.

► The CMF regimen involves cyclophosphamide 100 mg/m^2 given orally on days 1-14; methotrexate in doses of 40 mg/m^2 via IV on days 1 and 8; and 5-fluorouracil 600 mg/m^2 given by IV on days 1 and 8, repeated every 28 days for a total of six cycles.

The women were compared with 30 age-matched controls.

Women took several tests designed to measure cognition as well as mood a few days before initiating chemotherapy (but after the diagnosis had been given and treatment course was decided); again at the start of each new treatment cycle; and for the last time 28 days after the final treatment cycle had begun in each group. Patients were assessed on the National Institute of Mental Health's Center for Epidemiologic Studies Depression (CES-D) scale, the State-Trait Anxiety Inventory (STAI) scale, and a test of Dr. Darby's own design, which measures detection speed, identification speed, working memory, and learning ability in a 10- to 12-minute battery.

Dr. Darby is the chief medical officer of a company he formed, called CogState, which produces and scores these tests. It is based in Australia and partly funded this study.

"The first finding of interest was that prior to the first cycle of chemo there was impairment in learning of moderate amplitude, and that was also associated with a mild reduction on mood scales or depressive scales," said Dr. Darby in an interview. No women were clinically depressed (clinically depressed patients were excluded from the study) and none of the women were on antidepressants at baseline or throughout the study. However, he said, "There may have been an impairment there initially, prior to chemo."

Two other findings also emerged, both good and bad. "There was an improvement of some of the learning aspects of their performance and a mild improvement on scores on anxiety scales, but there was also a mild deterioration in aspects of concentration and psychomotor speed [as the study progressed]." There was also evidence that patients' mood was declining slightly throughout the treatment.

Individual patients showed "quite a lot of variation—in particular, some patients would have impairment on only one occasion and then improve, and others would have impairment on two or more occasions," he said. Persistent impairment, that occurring on two consecutive occasions, was seen in only three patients, or 10% of the total, Dr. Darby reported at the annual meeting of the American Academy of Neurology.

Impairment in concentration was not severe, "equivalent to the sort of jet-lag that I'm feeling now, having travelled from Australia." He also likened it to the sort of impairment one would feel after being awake for about 17 hours.

Dr. Darby found no significant differences in the risk for cognitive impairment based on the women's age, menopausal status (pre-, peri-, or post-), or time from surgery.

As for the practical applications of his results, Dr. Darby said, "When women are confronting breast cancer, coming to terms with the many different aspects of it, and trying to take advice and understand what's happening to them, the issues of quality of life are important. They should realize that these sorts of changes seem to be very mild." ■