Do Circulating Breast Ca Cells Mean Metastasis?

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BARCELONA — It is clinically feasible to measure breast tumor cells in a patient's circulation, according to the findings of an observational study.

The next step is to determine whether the presence of these cells is truly predictive of impending recurrence or metastasis.

Breast cancer kills only if it metastasizes, so it is important to identify the earliest signs of metastasis. Measuring circulating tumor cells (CTCs) may be a key step in this direction, said Dr. Julia Jueckstock of the department of obstetrics and gynecology, Ludwig-Maximilians University, Munich, where the technique is being pioneered.

Earlier findings showing that CTCs can be measured in bone marrow samples suggest that the presence of tumor cells outside the primary tumor site are indeed predictive of metastasis and poor prognosis. But the difficulty of obtaining bone marrow makes this approach impractical for routine clinical use. Analysis of peripheral blood is potentially much more useful.

Dr. Jueckstock and her colleagues' work is part of the ongoing SUCCESS (Simultaneous Study of Docetaxel-Gemcitabine Combination Adjuvant Treatment With Extended Bisphosphonate and Surveillance) trial. The investigators collected blood from 852 women with high-risk, node-negative breast tumors immediately following surgery but before chemotherapy, then at the end of chemo, and again after 2 years and 5 years.

"These were women with large tumors of unfavorable grade," Dr. Jueckstock said at the 14th European Cancer Conference.

In all, 94 (11%) had CTCs present after surgery but before chemotherapy. Of these, only nine patients (10%) remained CTC-positive after treatment with either docetaxel or gemcitabine, suggesting that these drugs are effective in reducing the risk of metastasis in most patients.

Of the women who were CTC-negative after surgery, only 7% became positive at some point during the postchemo follow-up. At some stage, 10% of the total patient cohort showed CTCs, measured as number of tumor cells per 20 mL blood. There were no CTCs detected in samples from 24 healthy controls.

If the CTCs do prove prognostic, this test would provide a relatively simple way to determine which patients need closer radiologic examination.

Dr. Jueckstock noted that the presence of CTCs did not correlate with any known risk factor for metastasis or progression, other than lymph node status. Circulating CTCs tend to accompany lymphatic invasion.

"Screening blood for CTCs is practical and can be done during chemotherapy and at any time during the follow-up period," said Dr. Jueckstock. It is clearly more patient-friendly than bone marrow sampling, the only other current method for attempting to predict metastasis.

Does the presence of CTCs mean imminent metastasis? "We know this technology works. The big question is, what does it really tell us?" asked Dr. John Smyth, chair of medical oncology at the University of Edinburgh, commenting on Dr. Jueckstock's presentation. "We don't yet know whether detecting those CTCs has any real clinical significance."

That question will be answered further down the road as the Munich investigators follow the patients. "We think it will predict the likelihood of recurrence and metastasis, but we don't have the data yet," Dr. Jueckstock said.

If the CTCs do prove prognostic, this testing method could have major clinical importance. It would provide a relatively simple way of determining which patients need closer and more thorough radiologic examination to seek out potential metastases at their earliest, potentially treatable stages.

"We will have the final results within 5 years. If the study goes as expected, and CTCs have independent prognostic value, we really think this could improve patient care by identifying who needs very aggressive therapy, and by helping us to not over-treat the low-risk patients," she said at the meeting, which was sponsored by the Federation of European Cancer Societies. ■