Urine Test May Help Detect Ovarian Cancer Earlier

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SAN DIEGO — High levels of Bcl-2 in a woman's urine could be a marker for ovarian cancer.

The average amount of Bcl-2, an anti-apoptotic protein that promotes cell survival, in the urine of patients with ovarian cancer was up to 10 times greater than that for healthy controls in a study reported in a poster presentation at the annual meeting of the American Association for Cancer Research.

"Measuring urinary Bcl-2 could provide a safe, specific, and economical way to detect ovarian cancer at an early, and therefore potentially curable, stage," Dr. Patricia Kruk, of the University of South Florida, Tampa, and her coauthors suggested.

The symptoms of ovarian cancer—gas, pelvic pain, abdominal bloating—are nonspecific and are generally experienced by virtually all women from time to time.

Because these signs are so vague, most women who have ovarian cancer are diagnosed with late-stage disease, and they have a very poor prognosis, with their 5-year survival no better than 37%, Dr. Kruk explained.

"Many people will refer to this as the disease that whispers because there are no symptoms," she said.

To validate data from an earlier pilot study that found high urinary levels of Bcl-2 were associated with ovarian cancer, Dr. Kruk and her associates obtained additional urine samples from Dr. Robert Bast of the University of Texas M.D. Anderson Cancer Center in Houston. The samples had been collected from 58 normal, healthy volunteers, 122 patients with benign gynecologic disease, and 115 patients who had ovarian cancer.

The samples were measured for Bcl-2 by enzyme-linked immunosorbent assay (ELISA).

The results of the assay showed that the average amount of Bcl-2 in the urine of the patients who had ovarian cancer was found to be greater than 2 ng/mL and up to 10 times greater than that of the healthy controls or of those patients who had benign disease.

Urinary Bcl-2 was more accurate in identifying ovarian cancer than was cancer antigen 125, which is currently considered to be the accepted standard.

With logistic regression, the investigators calculated that the predicted odds of cancer increased 27% with a 0.1-ng/mL increase in urinary Bcl-2 (P less than .001). Analysis of variance (ANOVA) analyses of clinical parameters indicated that the urinary levels of Bcl-2 were not significantly related to tumor size, grade, or stage.

Urinary Bcl-2 was more accurate in identifying ovarian cancer than was cancer antigen 125 (CA125), which is currently considered to be the accepted standard for ovarian cancer detection, Dr. Kruk said.

"The CA125 test is the best test we have, but it's not 100% accurate. Some people say that it ranges anywhere from 50% to 70% in accuracy and specificity, so there are a number of false positives and false negatives," she said.

However, "we found that our urinary Bcl-2 test performs at least as well as, and in some instances even better, than the CA125 test."

Dr. Kruk and her colleagues also reported that urinary levels of Bcl-2 decreased in ovarian cancer patients following initial debulking surgery and that it remained low while the women were receiving chemotherapy.

However, these levels increased significantly with recurrence of disease.

The urine test has been patented and has been licensed to GeoPharma Inc., she added.

"The hope is that this test will be used as part of a woman's annual physical examination, right in her doctor's office. A urine test is very simple to do, and we would expect high patient compliance, and, used either alone or in conjunction with CA125, the test might provide a better way for us to diagnose ovarian cancer," she said.

In addition, being able to diagnose ovarian cancer at an earlier stage will save lives, Dr. Kruk said. ■

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