Hope for early test for female cancers

Hopkins study uses Pap smears, genome sequencing

BY ANDREA K. WALKER
The Baltimore Sun

Johns Hopkins scientists have found a way to screen for hard-to-detect endometrial and ovarian cancers in women using a routine Pap smear, a discovery they hope eventually could reduce the number of deaths caused by the deadly malignancies.

The researchers from the Johns Hopkins Kimmel Cancer Center hope the Pap smear, a procedure in which cells are scraped from the cervix and examined under a microscope, can catch the two cancers in early stages and allow for earlier treatment.

The Pap test has dramatically improved detection of cervical cancer over the years, curbing deaths by 75 percent among those who are screened. The scientists hope for similar success with ovarian and endometrial cancers, which kill about 23,000 women each year.

While the researchers said the results are promising, they caution that a larger study is
Hope of early cancer detection

PAP TESTS, From page 1

needed before widespread use of the test is recommended. Scientists from the University of Sao Paulo in Brazil and the Memorial Sloan-Kettering Cancer Center in New York also participated in the research.

"I think it has the ability to make a huge impact if what we find in this pilot study holds true in a larger study," said Dr. Luis Diaz, a professor of oncology at Johns Hopkins and a lead researcher on the study.

"This is really something that can be done as part of routine medical care."

Limited use of the test to detect the cancers could begin in the next three to five years if further study continues to show positive results, Diaz said.

Diaz and the other researchers used genome sequencing to identify ovarian and endometrial cancer cells, a process made possible by a liquid-based Pap smear introduced in the past decade that allows for the collection of DNA. Doctors have successfully used the technique to screen for HPV, the virus that causes cervical cancer.

The Hopkins researchers created a catalog of common mutations related to ovarian and endometrial cancers using data from previous studies as well as new cell samples. Then, using the Pap test, the scientists collected ovarian and endometrial cells from cancer patients that drifted naturally into the cervix. They looked for the common mutations in the collected cells, which included both normal and cancer cells.

The scientists were able to detect 100 percent of endometrial cancers but only 41 percent of ovarian cancers in study subjects through the use of Pap smears.

Diaz hopes that follow-up research will help improve the screening rate for ovarian cancer, which is known as a "silent killer" because it is often caught so late. Because the ovaries are so far away from the cervix, the scientists may not have gotten a good sampling of ovarian cells, he said. One solution could be to use a different medical instrument to better reach the cells.

"Because of the geography of the female anatomy and ovaries being further away we think there are more opportunities for the cells of the ovarian tumor just not making it all the way down," said another lead researcher, Isaac Kindel, a graduate student at the Johns Hopkins School of Medicine.

There are no standard or routine screening tests for either ovarian or endometrial cancer currently recommended by the medical community.

Blood tests, ultrasounds and biopsies used by some doctors to detect ovarian and endometrial cancers either aren't accurate or have been deemed by many medical groups as more harmful than helpful to women.

A government panel ruled in the fall that ovaries should not be screened in healthy women because screenings do not lower death rates and frequently show that women have cancer when they don't. Members of the U.S. Preventive Services Task Force said many women ended up getting unnecessary invasive surgeries because of false-positive tests. The recommendations weren't aimed at high-risk women.

Endometrial cancer is often detected early because women show signs of heavy bleeding. But tests to detect the disease also aren't always accurate. One method is to check the thickness of the endometrium because those with cancer are often thicker. But sometimes lesions or polyps can also cause the endometrium to expand.

The head of a national group dedicated to research on early detection of ovarian cancer said the Hopkins study shows promise. "The preliminary results from the PapGene Test appear promising and continue to support the need for early detection screening tools," said David Barley, CEO of the National Ovarian Cancer Coalition. "We look forward to validation of the research and further advances in genetic testing technology to aid in increasing ovarian cancer survival rates, which have remained relatively unchanged for decades."

"Advancements such as this lead us to further studies and progress," Barley added.

Dr. David Chelmow, who led the development of cervical screening guidelines for the American College of Obstetricians and Gynecologists, said a Pap smear could be a screening method that is accessible to many women. But he warned that further testing is crucial because false positives have been a major problem when trying to detect the cancers with other methods.

"If we could find anything to screen for these cancers, whether it is a blood test or Pap smear, it would be a major step forward," said Chelmow, chair of the department of obstetrics and gynecology at Virginia Commonwealth University Medical Center in Richmond, Va.

The Baltimore chapter of Swim Across America, which funded the laboratory at Johns Hopkins where the Pap smear research was conducted, also have high hopes for the results study. The group raises money for the cure and early detection of all cancers.

"It's cost effective. It's easy. It's non-invasive," said John Dierkes, co-founder of the group. "While it will take time to get final approvals, we are excited about anything that is available to the public and doesn't take a $30,000 genetic test."

andrewwalker@baltaun.com
twitter.com/anwalker