

Proteins show promise for ovarian cancer screening

Elevated levels of three proteins show ovarian cancer is starting to grow years before women are diagnosed, but they do not increase soon enough to be an early indicator of the disease, U.S. researchers said on Wednesday.

The researchers analyzed blood samples from a large clinical trial and identified 34 women with ovarian cancer along with a control group of 70 women who did not have cancer. Their blood samples were used to evaluate six proteins identified as potential indicators of ovarian cancers.

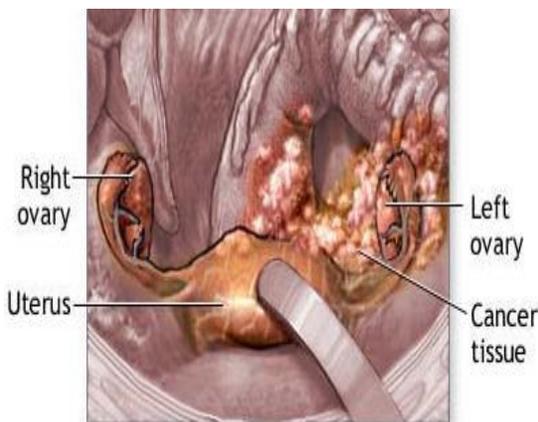
Levels of three of the proteins began to increase slightly in ovarian cancer patients three years before diagnosis but did not reach a level that could be detected in a screening program, the researchers wrote in the *Journal of the National Cancer Institute*.

"Even though an elevation appears to start in women with cancer maybe three years before her symptoms lead her to the doctor the levels aren't really what we'd probably define as abnormal until within the last year before diagnosis," wrote lead author Garnet Anderson of the Fred Hutchinson Cancer Research Center in Seattle.

There is no simple and reliable screening program to test for ovarian cancer in women who do not have symptoms.

Ovarian cancer, which mainly strikes older women, causes more deaths than any other cancer of the female reproductive system. Women diagnosed in the earliest stages have a five-year survival rate of nearly 93 percent, according to the American Cancer Society.

Researchers seeking to a screening program to detect ovarian cancer are looking for something similar to the PSA for prostate cancer, Anderson said.



PSA, or Prostate-specific antigen, is a protein monitored for early detection of prostate cancer in men.

"We'd like that for ovarian cancer because it's clear that women who are detected at the stage where the disease is still confined to the ovaries do very well. Their prognosis is excellent," Anderson said.

"CA125, which is one of the markers we looked at, is the best biomarker that's been identified to date and our study confirms that and this prediagnostic period as well. But it's not sufficiently accurate."

In an accompanying editorial, Patricia Hartege of the National Cancer Institute said the authors had taken research at step closer to a successful screening design.

"The careful evaluation technique applied in the current study fits into a staged approach necessary for testing performance of early markers of disease," Hartege wrote.

The U.S. Centers for Disease Control and Prevention estimates that more than \$2.2 billion is spent on the treatment of ovarian cancer per year in the United States.:

References

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Stem Cells Might Reverse Heart Damage From Chemo

Certain types of chemotherapy can damage the heart while thwarting cancer, a dilemma that has vexed scientists for years. But a new study in rats finds that injecting the heart with stem cells can reverse the damage caused by a potent anti-cancer drug.

The findings could one day mean that cancer patients could safely take higher doses of a powerful class of chemotherapy drugs and have any resulting damage to their hearts repaired later on using their own cardiac stem cells, the researchers said.

Doxorubicin is a common chemotherapy drug used to treat many types of cancer, including breast, ovarian, lung, thyroid, neuroblastoma, lymphoma and leukemia.

But the drug can have serious side effects, including heart damage that can lead to congestive failure years after cancer treatment ends.

in the study, researchers removed cardiac stem cells from rodents before chemotherapy. The stem cells were isolated and expanded in the lab.

Rats were then given the chemo drug doxorubicin, inducing heart failure. Afterward, the rats' stem cells were re-injected into their hearts, and the damage was reversed.

"Theoretically, patients could be rescued using their own stem cells," said study author Dr. Piero Anversa, director of the Center for Regenerative Medicine at Brigham and Women's Hospital in Boston.

A Phase 1 clinical trial using a similar procedure in people is already under way, said Dr. Roberto Bolli, chief of cardiology and director of the Institute of Molecular Cardiology at the University of Louisville in Kentucky, who is heading the trial.

His lab has U.S. Food and Drug Administration approval to treat 30 patients who have heart failure from cardiovascular disease, not chemotherapy.

In the trial, participants' cardiac tissue will be harvested, the stem cells isolated and then expanded in vitro from about 500 cells to 1 million cells over several weeks, Bolli explained. Several months after the patient has undergone bypass surgery, the stem cells will be re-injected.

Researchers believe the stem cells can differentiate into new heart muscle and blood vessel cells. In addition, the stem cells release cytokines, substances that stimulate the heart's internal repair system, Bolli said.

The clinical trial is still enrolling participants, and it's too soon to tell how patients who have had the procedure are faring, Bolli said.

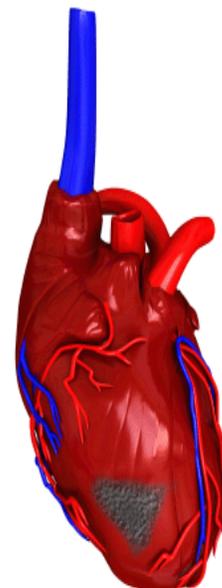
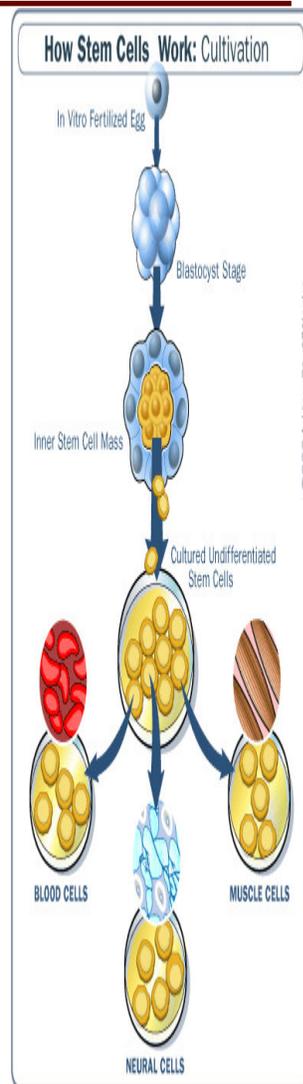
For cancer patients, doxorubicin and other medications in the class of chemotherapy drugs called anthracyclines, can be potent tumor fighters. However, oncologists often must limit doses because of the risks to the heart, Anversa said.

If future research shows the stem cell procedure is safe and effective in people, it could one day mean doctors could give higher doses of chemotherapy drugs, knowing that if stem cells are harvested, there is the ability to repair damage to the heart down the line.

"For people, this could potentially be a very important development," Bolli said. "Doxorubicin is a very effective anti-cancer drug, but the use is limited by the toxicity. If this issue can be overcome, it would be a major leap forward for anti-cancer therapy."

SOURCES:

Piero Anversa, M.D., director, Center for Regenerative Medicine, Departments of Anesthesia and Medicine and Cardiovascular Division, Brigham and Women's Hospital, Boston; Roberto Bolli, M.D., chief, cardiology, and director, Institute of Molecular Cardiology, University of Louisville, Ken.; Dec. 28, 2009, *Circulation*, online



Swine Flu Not As Infectious Among Young Adults As First Feared.

Researchers from the U.S. Centers for Disease Control and Prevention and Imperial College London tracked the spread of H1N1 influenza in 216 households that included a total of 816 people. In each household, one member of the family had been diagnosed with H1N1 during the first wave of swine flu in spring of 2009.

About 13 percent of other household members, or one in eight, came down with the H1N1 flu. Put another way, in 72 percent of households in which one person had the swine flu, no other family member came down with it. In 21 percent of households, one other person got the flu, while in 6 percent, more than one other family member got the flu, the study found.

Children and teens aged 18 and under were twice as likely as those aged 19 to 50 to contract the flu. Those who were 51 and older were less likely still than those in the middle-aged group to contract the flu, according to the study published in the Dec. 31 issue of the *New England Journal of Medicine*.

It's probably because people in the middle age group have a little acquired immunity because of prior exposure to another virus that was similar enough," said study co-author Lyn Finelli, lead for the CDC's Epidemiology and Surveillance H1N1 Response Team.

Researchers also found that H1N1 flu was not as easily spread within households as the prior pandemic flu outbreaks of 1957 and 1968.

"The study is significant because the prevailing view has been that the H1N1 virus was very efficiently transmitted, but based on this study, at least at the level of the household, it was not very efficiently transmitted," said Dr. Pascal James Imperato, dean and distinguished service professor in the School of Public Health at State University of New York Downstate Medical Center, in Brooklyn, N.Y.

Other strains of H1N1 virus have been circulating in the United States for decades, including pre-1957, which explains why older people are resistant to infection, Imperato said. Having already been exposed to H1N1, they developed antibodies to the virus that protected from future infections. H1N1 also reappeared in the late 1970s, causing significant illness in 1978 through the mid-1980s, Imperato said.

Still, experts said the new report should not be read as reason to take swine flu any less seriously.

Children are still being hit unusually hard by the flu. As of mid-November, the CDC estimates some 1,090 U.S. children have died from H1N1, three to four times as many as during a typical flu season, Finelli said.

"Children are at very high risk of hospitalization, are very vulnerable to this flu and should be vaccinated," Finelli said. "We continue to have deaths every day from it, even though a lot of the disease has abated."



Dr. Marc Siegel, an associate professor of medicine at the NYU Langone Medical Center, also recommends people of all ages get vaccinated.

"When kids die, you pay attention," Siegel said. "H1N1 is well worth vaccinating against. It's still something that should be taken seriously and it's not over yet."

Siegel pointed out one weakness of the study is that flu was not confirmed by blood test, but diagnosed by symptoms. That means that other members of the household could have been infected, but were asymptomatic.

"This study only looks at who gets sick, but it leaves out sub-clinical infection," Siegel noted. "What they could be finding is that it's a mild virus, rather than how easily it's spread."

Americans should continue to practice frequent hand washing with warm soapy water or an alcohol-based hand rub if soap and water aren't available; avoid touching the eyes, nose and mouth; avoid close contact with sick family members unless you are caring for them; cover your nose and mouth with a tissue if you cough or sneeze; and stay home if you are sick, advised Finelli.

The study also found, in contrast to conventional wisdom, children were no more likely to spread the flu to other family members than people in other age groups.

Most transmissions of the flu among family members occur either shortly before or after the first patient shows symptoms of infection, said study author Simon Cauchemez, of Imperial College London. The average time between the first person in the household showing flu symptoms and someone else in the household having symptoms was 2.6 days.

In a related study in the same issue of the journal, Johns Hopkins researchers reported on an outbreak of H1N1 flu in a New York City high school. The scientists found that although the infection spread rapidly and widely, it did not cause severe illness for the most part.

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Heel Pain Usually Relieved With Stretching Regimen

The term "overuse injuries" may bring to mind tennis elbow and jogger's knee, but the sole of the foot is also at risk of injury due to overuse, doctors warn.

The condition, plantar fasciitis, or inflamed tissue and swelling of the sole of the foot, can become chronic if steps aren't taken to relieve it, according to Dr. Benedict DiGiovanni, an associate professor of orthopaedics at the University of Rochester Medical Center.

Weight gain or spending lots of time walking or standing can bring on the condition. The first signs of plantar fasciitis are typically heel pain when stepping out of bed, according to information in a news release from the American Orthopaedic Foot & Ankle Society.

If not dealt with, the pain of plantar fasciitis can worsen and possibly lead to problems with the foot, knee, hip and back due to gait changes. Plantar fasciitis can even impact pro athletes. Last fall, New York Giants quarterback Eli Manning struggled with the condition and a subsequent stress reaction in his foot for most of the season.

It's hard, of course, to stay off your feet when you have things to do. So, to treat plantar fasciitis, DiGiovanni recommends taking it easy until the initial inflammation subsides, icing the sore area for 20 minutes, three or four times a day, and performing exercises to stretch the Achilles tendon in the back of the lower leg and plantar fascia, or the connective tissue that supports the arch of the foot.

The stretches should be performed before stepping out of bed in the morning and before taking a first step after being inactive for awhile. The stretches should be repeated four or five times per day for the first month, and then as needed, DiGiovanni explained. Also stretch the Achilles tendon twice a day, morning and evening.

Other options include over-the-counter anti-inflammatory medicine, over-the-counter soft arch supports, supportive shoes with shock-absorbing soles or taping the foot to support the arch.

By taking these steps, about 90 percent of people with plantar fasciitis see significant improvements within two months, DiGiovanni said

If the pain continues or gets worse, orthopedic surgeons often suggest heel injections with steroidal anti-inflammatory medications, walking casts or positional splints.

SOURCE: American Orthopaedic Foot & Ankle Society, news release, Dec. 21, 2009

