New Test for Breast Cancer Will Help Guide Treatment Choices

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(PhysOrg.com) -- One in eight women in the United States will receive a diagnosis of breast cancer in their lifetime, and it is the second leading cause of cancer-related death in women. Now a new test will help physicians determine the best possible treatment for each patient.

"Our research shows that there is a subset of women who can be cured without getting any treatment at all, other than a lumpectomy," explains Philip Bernard, M.D., an investigator at the University of Utah's Huntsman Cancer Institute and one of the senior authors on a multicenter study published in the Feb. 9 issue of the *Journal of Clinical Oncology*. "In women whose tumors have spread, we can predict with very high accuracy which women are going to respond to chemotherapy and which type of chemotherapy will work."

Only recently have scientists known that there are different breast cancer subtypes that lead to differences in outcome. The group narrowed down 50 genes that play an important role in identifying subtypes of breast cancer. By measuring the expression level of these genes in the tumors, they could determine how each individual will respond to standard therapies.

"This will give women peace of mind knowing that we're diagnosing cancer more accurately than ever before. We can tell them if they are likely to benefit from chemotherapy. If chemo isn't going to be beneficial, we shouldn't be giving it," Bernard says.

The research translates into a simple test that will be available nationwide this summer. The test has been validated on thousands of women with breast cancer and has shown to be useful in many different clinical situations.

Based on the type of tumor, doctors now will be able to prescribe only the treatment that will be most beneficial. For some patients that could mean no chemotherapy at all. For others it will mean targeted treatments that work best for that patient, and they will no longer have to endure needless chemotherapy.

Women whose tumors indicate a resistance to current treatments will be referred to clinical trials of investigational drugs and treatments, opening the door to more effective medications in the future.

The group is currently designing prospective clinical trials using the test, which they refer to as the Breast Bioclassifier. Bernard plans to run these trials at Huntsman Cancer Institute and collaborating institutions.

The research took 10 years to complete and involved cooperation among several research institutions. The multicenter study was led by researchers at the University of Utah Huntsman Cancer Institute, Salt Lake City, Utah (Philip Bernard, M.D., assistant professor of pathology and medical director of molecular pathology at ARUP Laboratories); the University of North Carolina's Lineberger Comprehensive Cancer Center at Chapel Hill, N.C. (Charles Perou, Ph.D., associate professor of genetics and pathology); the University of British Columbia, Vancouver (Torsten Nielsen, M.D., Ph.D., associate professor of pathology); and Washington University Siteman Cancer Center, St. Louis, Mo. (Matthew Ellis, M.D., professor of medicine).

Bernard is one of the inventors of the test and has patents pending for the technology described in this news release. Additionally, he is a

partner in the company University Genomics, along with colleagues at the Lineberger Comprehensive Cancer Center and Siteman Cancer Center. The company is working to commercialize the test.

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