For many, mammography every other year has benefits of annual screening, but less harm

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A comprehensive analysis of various mammography screening schedules suggests that biennial (every two years) screening of average risk women between the ages of 50 and 74 achieves most of the benefits of annual screening, but with less harm. The results represent a unanimous consensus of six independent research groups from various academic institutions. Their findings are published in the November 17, 2009 *Annals of Internal Medicine*.

Researchers from CISNET, the NCI-funded Cancer Intervention and Surveillance Modeling Network, used independent models to examine 20 screening strategies with different starting and stopping ages and intervals. Modeling estimates the lifetime impact (outcomes including benefits and harms) of breast cancer screening mammography. The CISNET models link known data across the course of life and include national data on age-specific breast cancer incidence, mortality, mammography characteristics and treatment effects.

"It's reassuring that all CISNET modeling groups came to the same conclusion even when applying different models to these data," says the paper's lead author, Jeanne S. Mandelblatt, MD, MPH, of Georgetown Lombardi Comprehensive Cancer Center, a CISNET member. "While the findings represent a comprehensive review of existing data, decisions about the best screening strategy depend on individual and public health goals, resources, and tolerance for false-positive mammograms,

unnecessary biopsies and over-diagnosis."

The CISNET analysis shows that screening every other year maintains almost all of the benefit (an average of 81 percent) of annual screening with almost half the number of false-positives. Compared with no screening, mammography screening every other year from ages 50 to 69 achieves a median reduction in breast cancer mortality of 16.5 percent over a life time. If screening is started at age 40 versus 50 and performed every other year, there is a median mortality reduction of 19.5 percent (an additional 1 woman per 1000), but an increase in false-positives, unnecessary biopsies, and anxiety.

"False-positives" represent mammograms read as abnormal that often require further follow-up in women who are found to not have cancer. An "unnecessary biopsy" occurs after a false positive mammogram when the biopsy is normal. "Over-diagnosis" is the detection of a cancer through screening that otherwise never would have produced symptoms or affected the woman's health. Since usually it is not possible to determine which cancers will progress, almost all cancers detected during screening are treated.

Mandelblatt says the benefits of biennial screening are consistent with what is known about the breast cancer's biology. In the majority of women, most tumors are slow growing and this proportion increases with age, so that there is little loss in survival benefit across the population for screening every year versus every other year. For women with aggressive, faster growing tumors, annual screening is not likely to make a difference in survival. For these women, different approaches may be needed and is an important area of on-going research.

While the model results confirmed that mammography saves lives, Mandelblatt explains that there are smaller overall benefits from starting screening earlier than age 50 because few women develop breast cancer

in the younger age groups, and screening younger women is accompanied by a large number of false-positive mammograms. "This can lead to stress for women and unnecessary biopsies. We need more research to understand how to tailor screening by individual risk," she says.

"These modeling data represent an average finding regarding the population of women so it can't be emphasized enough that women need to talk to their health care provider for a screening program that is best for them," Mandelblatt concludes.

Source: Georgetown University Medical Center (news : web)