

Statin therapy ineffective in breast cancer prevention

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Laboratory work in animals showed limited activity when statins were given to prevent breast cancer, according to a report in the February issue of *Cancer Prevention Research*, a journal of the American Association for Cancer Research.

Statins, sold under brand names like Lipitor and Zocor, are primarily given to lower cholesterol and prevent heart disease, and prominent cardiologists almost universally agree that their use has changed the landscape.

The use of these drugs in cancer prevention has been more controversial. Results of epidemiology studies, which rely on looking backward rather than forward and thus are subject to confounding factors, have yielded mixed results when examining breast cancer.

Scientists under the auspices of the NCI, including Ronald Lubet, Ph.D., an NCI program director, and Clinton Grubbs, Ph.D., director of the Chemoprevention Center at the University of Alabama at Birmingham conducted laboratory work in animals to determine if statins actually prevent both ER-positive and ER-negative breast cancer.

In the current study, scientists tested atorvastatin and lovastatin. "We saw no real efficacy from either statin," said Lubet. "Prior studies have shown some but limited efficacy in breast cancer models when these drugs were given through a method that would be the equivalent of intravenously in humans. However, that is not the way people take statins."

Atorvastatin was administered at either 125 or 500 mg/kg in the diet of rats, and it did not alter the incidence of estrogen receptor-positive mammary cancers or its multiplicity. Similarly, no effect of atorvastatin was observed in an estrogen receptor-negative model in mice.

By contrast, when these mice were given 0.4 mg of

tamoxifen or 80 mg of bexarotene there was a significant reduction in the multiplicity of mammary tumors. Combining these regimens with atorvastatin did not augment the positive effects of these other agents.

Lovastatin was given at 100 and 500 mg/kg, and it showed no significant preventive effect similar to atorvastatin.

Lubet said the research into statin use and cancer prevention would continue.

"There is always the question of whether there will be a subset of breast cancer where this class of agents will be effective, but the answer at this point is that the present preclinical studies do not support the use of statins as general breast cancer preventive agents" said Lubet.

Source: American Association for Cancer Research

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