

Smoking did not influence breast cancer risk among obese women: study

April 3 2011

Smoking increases the risk of breast cancer, but the risk differs by obesity status in postmenopausal women, according to data from an analysis of the Women's Health Initiative observational study.

A significant association between smoking and [breast cancer](#) risk was observed in non-obese women, but not in obese women. The results were similar regardless of whether obesity was defined by [body mass index](#) (BMI) or [waist circumference](#).

Juhua Luo, Ph.D., assistant professor in the department of community medicine at West Virginia University, and colleagues examined the relationship between obesity, smoking and breast cancer risk. Luo presented these study results at the AACR 102nd Annual Meeting 2011, held here April 2-6.

"We found an association between smoking and breast cancer risk among non-obese women, which is understandable because tobacco is a known carcinogen," Dr. Luo said. "However, we did not find the same association between smoking and breast cancer risk among obese women. This result was surprising."

The study included 76,628 women aged 50 to 79 years old who had no previous history of cancer. Participants were part of the Women's Health Initiative observational study. They were recruited between 1993 and 1998 at 40 U.S. centers and were followed until 2009.

Obesity was measured by BMI and by waist circumference, and the results were adjusted for other breast cancer risk factors.

The study results indicated that non-obese women with a BMI less than 30 who had a history of smoking had a significantly higher risk for breast cancer. Those who smoked from 10 to 29 years had a 16 percent excess risk; those with a 30- to 49-year history of smoking had a 25 percent excess risk; and those with 50 or more years of smoking had a 62 percent excess risk. However, this same association was not found among women with a BMI over 30.

The researchers then examined the data according to waist circumference to determine if the type of fat distribution – general compared with abdominal obesity – affected the results. When obesity status was defined by a waist circumference greater than 88 cm, similar results were found.

Despite the study's finding that smoking did not affect breast cancer risk among obese [postmenopausal women](#), Luo emphasized that she does not want to give the public the wrong message. Previous research has established that obesity alone is a risk factor for postmenopausal breast cancer.

"Smoking and obesity are among the leading causes of morbidity and mortality, both of which have substantial consequences on health," she said. "This is only the first study to examine the interaction between smoking, [obesity](#) and breast cancer risk. The main conclusion from this research is that more studies are needed to confirm these results."

Provided by American Association for Cancer Research

Citation: Smoking did not influence breast cancer risk among obese women: study (2011, April

3) retrieved 1 May 2024 from

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