Hormone Replacement Therapy Counteracts Exercise in Breast Cancer Risk-Reduction

BY ED SUSMAN

CHICAGO—Physical activity is known to reduce the risk of breast cancer—but all the benefit of that activity appears to be negated by taking hormone replacement therapy. That is the conclusion of a meta-analysis reported here at the American Society of Clinical Oncology Annual Meeting (***Abstract 1561***).

"If you are a runner you should not take hormone replacement therapy because the hormones appear to wipe out the benefit as far as prevention of breast cancer is concerned," Cécile Pizot, MS, a biostatistician at the International Prevention Research Institute in France, said in an interview at her poster study.

"A lower risk of breast cancer among physically active women has been frequently reported, but the risk in women using hormone replacement therapy appears to be higher."

'Persuasive Evidence'

Asked for her perspective, Stephanie Bernik, MD, Chief of Surgical Oncology at Lenox Hill Hospital in New York City, said: "Although it has been known that physical activity could reduce the risk of breast cancer and that hormone replacement could increase the risk of the disease, it is interesting that this meta-analysis showed that hormone replacement could actually negate the positive effects of exercise.

"Women who exercise often want to do what they can to feel young and stay healthy," she continued. "Although we have known the negative effects of hormone therapy, doctors now have persuasive evidence that the negative effects of hormone replacement therapy override the positive effect of physical activity.

"Women should be encouraged to do what they can to live healthy lifestyles, with the understanding that it is difficult to justify the use of hormone replacement therapy as part of that equation."

Study Details

Pizot explained that the goal of the study was to quantify the association between physical activity and breast cancer, and examine the influence that hormone replacement use and other risk factors had on this association.

After a literature search, the team identified 38 studies that reported on

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EXERCISE/HRT

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physical activity and its relationship to breast cancer. The search was restricted to articles published in English from 1987 to November 2014 and available on various science-based databases. Eligible articles had to report data on incident cases of breast cancer; report measurement of physical activity, note whether the activity was occupational and/or non-occupational; and have a prospective design.

The 38 studies included a total of 4,183,888 women, of whom 116,304 were diagnosed with breast cancer—12 percent were premenopausal, 45 percent were postmenopausal and the status was unknown for 43 percent.

"When all 38 studies were analyzed together, the risk of breast cancer in women with the highest level of physical activity was 12 percent lower than in women with low or no physical activity," Pizot said.

"The stratified analysis revealed that physical activity decreased the risk of breast cancer across subgroups, with physical activity performed on the job similar in effect to physical activity done as recreation."

A greater reduction in breast cancer risk was evident in women with hormone receptor negative phenotype and in studies conducted before 1989.

The use of hormone replacement therapy was mentioned in 21 of the 38 studies, although only six of the studies reported results. Although the summary risk reduction for the women in these six studies was 0.78—a 22 percent reduction in risk, "it seems that the entire preventive effect of physical activity is confined to women who never used hormone replacement therapy," she said.

Underestimated?

The risk reduction for women who used hormones and were physically active was three percent, a non-significant difference, Pizot said. "As about 38 percent of women included in our analysis never used hormone replacement therapy, it is possible that we underestimated the risk in reduction induced by physical activity."

> "Women should be encouraged to do what they can to live healthy lifestyles, but it is difficult to justify the use of HRT as part of that equation."

The researchers also suggested that the capacity of physical activity to reduce the risk of breast cancer in women has probably been underestimated by studies conducted after 1989 when hormone replacement therapy use was more prevalent. "Physical activity decreases the risk of breast cancer, probably through lower circulating of estrogen levels but hormone replacement therapy use would nullify this action," Pizot said.

Despite the limitations in quantification and reporting of exposure, heterogeneity in study results was moderate, suggesting that most studies consistently found reduced risks of breast cancer associated with increasing levels of reported physical activity, the researchers reported.

"A sustained change from being physically inactive to engaging in four to seven hours a week of mainly vigorous physical activity could lead to a 31 percent risk reduction in women who never used hormone replacement therapy," Pizot said. "This study indicates that avoidance of sedentary behaviors and promotion of physical activity may contribute to control the increase in breast cancer burden taking place in most populations over the world.

"People should get up and move, and not take hormone replacement therapy."

Key Findings

- Increased levels of physical activity led to reductions in breast cancer risk no matter what the type of physical activity, the place of residence, the individual adiposity or menopausal status, or the tumor's hormone receptor status;
- Breast cancer risk seems to decline with increasing physical activity, without a threshold effect; and
- Women who used hormone replacement therapy at any time in the past or present had no reduction in the breast cancer risk associated with physical activity.