

Dietary Fats May Affect Endometriosis Risk

BY JENNIE SMITH

Data from a large cohort study has shown that women who regularly eat fish, mayonnaise, and other foods rich in omega-3 fatty acids are at decreased risk of being diagnosed with endometriosis—and that women with diets rich in trans fats, by contrast, are much likelier to develop the disease.

The findings suggested no association between women's endometriosis risk and overall fat intake, but only associations by the type of dietary fats consumed. Women in the highest fifth of long-chain omega-3 fatty acid consumption were 22% less likely to be diagnosed with endometriosis, compared with those in the lowest fifth. Women in the highest fifth of trans fat consumption were 48% more likely to be diagnosed with endometriosis than those in the bottom fifth.

The results were adjusted for variables such as age at menarche, menstrual cycle length, and parity (Hum. Reprod. 2010 March 24 [doi:10.1093/humrep/deq044]).

"The message—and we stress that this is the first publication to address this—is that the findings affirm the benefits of a healthy-fat diet that has also been shown to be beneficial for cardiovascu-

lar health. Low-fat across the board is not the way to go," Stacey A. Missmer, Sc.D., lead author of the study, said in an interview.

For their analysis, Dr. Missmer of Harvard Medical School, Boston, and colleagues examined 12 years of data (1989-2001) from 70,709 women who were registered nurses. Diet assessments were based on self-reported questionnaires, but diagnoses of endometriosis (with or without infertility) were confirmed through medical records. Women with prior endometriosis, who had undergone hysterectomy, were menopausal, or had prior cancer were excluded. The study participants updated their diet information at 4-year intervals over the course of the study period; by the final year of analysis, 1,199 cases of laparoscopically confirmed endometriosis were reported.

The researchers identified the major sources of long-chain omega-3 fatty acids in their diets as salad dressing and mayonnaise, tuna, and other dark fish, although Dr. Missmer said some women reported taking omega-3 supplements. The major sources of trans-unsaturated fatty acids were fried foods not cooked at home, "particularly french fries," Dr. Missmer said, along with margarine and crackers.



Regular consumption of tuna and other dark fish may prevent endometriosis.

Although trans-unsaturated fats proved an easily identified culprit, an increased risk of endometriosis—20%—was also seen in the quintile of subjects who had consumed the most animal fats. However, the researchers wrote, "intakes of saturated fat and monounsaturated fat, the major components of animal fat, were not associated with endometriosis risk. Interestingly, palmitic acid intake, a saturated fat primarily contributed by animal products, was significantly related to increased endometri-

osis risk when all other dietary components were held constant."

The researchers were unable to draw any conclusions about the timing of dietary exposure (ranging from 2 to 10 years before diagnosis)—and endometriosis, finding the risk consistent across time. That does not mean, Dr. Missmer said, that adding omega-3 fatty acids and avoiding trans fats would not be helpful in preventing endometriosis. "We think that the more likely conclusion is that people don't tend to change their diets a lot," she said.

Indeed, the researchers predicted that endometriosis risk could be slashed significantly by substituting omega-3 fatty acids for trans fats. "Each 1% of energy from omega-3 fatty acids rather than from trans fats was associated with nearly a 50% lower risk of endometriosis," they wrote. "Also, each 1% of energy from trans fats rather than from any other type of fat was associated with a significantly higher risk of endometriosis." ■

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COMMENTARY

Lifestyle Changes and Breast Cancer Risks

Our patients often ask whether lifestyle changes can help reduce their risk of breast cancer recurrence. Although there is no shortage of opinion as to what to eat (or not eat), which exercise program is optimum, and how much alcohol is too much, hard evidence can be more difficult to find.

Many investigators are addressing these issues, and interesting data were presented at the most recent San Antonio Breast Cancer Symposium. The studies to date do not provide definitive answers—indeed, in some cases, they raise more questions—but they can help inform these discussions that are so important to our patients.

Soy and Breast Cancer

A number of recent publications, as well as a study presented in San Antonio by Dr. Masakazu Toi of Kyoto (Japan) University, suggest that early-age intake of soy protein and isoflavones may contribute to lower breast cancer risk in Asian women. Also, a recent publication from the Shanghai Breast Cancer Survival Study found that soy food intake was associated with a significant decrease in risk of death and recurrence in a cohort of 5,033 surgically treated breast cancer patients (JAMA 2009;302:2437-43).

Consequently, it is relatively perplexing that a biomarker study presented in San Antonio by Dr. Seema A. Khan of Northwestern University, Chicago, and colleagues failed to show a difference in Ki-67, a measure of breast epithelial cell proliferation that reflects cancer risk, following 6 months of soy isoflavone supplementation. There are several important considerations that might explain this. First, the Asian patients consume a variety of soy products as part of their normal diet, and not as a supplement. Second, intake occurs in the diet over years, rather than months. Lastly, it may

be that the effect of soy is not well assessed by Ki-67 testing performed on random fine-needle aspirations.

So, what have we learned? Soy in the diet appears to reduce breast cancer risk in the long term, as well as the risk of recurrence and death, and standard markers of proliferation may not be appropriate as measures. Supplements may have very different effects than does the daily dietary pattern, and it does not appear that dietary soy has any negative effects on breast cancer outcome.

Alcohol and Breast Cancer Recurrence

The data from an interesting prospective study by Marilyn L. Kwan, Ph.D., and her colleagues at Kaiser Permanente in Oakland, Calif., suggest that moderate alcohol intake is dangerous, and contributes to risk of relapse in women with early-stage breast cancer. The impact on breast cancer-specific survival and recurrence was seen in women who drank as little as one-half drink per day, but there was no impact on death from all causes, even in women who were moderate to heavy drinkers.

In addition, the negative effect of moderate alcohol intake on breast cancer recurrence was limited to postmenopausal and overweight women. It may be that outcome from cancers in younger women is more strongly affected by tumor biology than by lifestyle factors, and that lifelong drinking patterns also affect breast cancer recurrence risk.

In any case, a large, prospective study would help to define more clearly specific, modifiable lifestyle factors that affect risk of recurrence and survival after a breast cancer diagnosis, but may not be practical. At present, it is reasonable to counsel patients with a history of breast cancer to limit alcohol intake, maintain a healthy weight, and limit fat intake.



BY HOPE S. RUGO, M.D.

Distant Metastases and Obesity

A Danish registry trial confirmed an adverse effect of obesity on breast cancer mortality, concordant with data demonstrating an increased risk in breast cancer diagnosis as well as adverse cancer biology in women with significant postmenopausal weight gain. Indeed, this study also correlated obesity with adverse tumor biology and higher stage at diagnosis.

In other studies, metabolic syndrome, obesity, and insulin resistance have been associated with poorer tumor biology, and the use of the antidiabetic agent metformin has been associated with decreased breast cancer incidence and perhaps improved outcome following diagnosis.

Although Dr. Martine Ewertz and her coauthors from the Danish Breast Cancer Cooperative Group suggested in San Antonio that inadequate dosing may account at least in part for their results, it is far more likely that biological factors are the critical component. The LISA (Lifestyle Intervention Study in Adjuvant Treatment of Early Breast Cancer) trial has enrolled more than 2,000 postmenopausal women with hormone receptor-positive, early-stage breast cancer in a program to evaluate the impact on recurrence of a 2-year, individualized, telephone-based lifestyle intervention focusing on weight management, compared with a mailed educational intervention.

What is the take-home message? For practitioners who care for women with breast cancer, advising patients about modifiable risk factors that may affect outcome should now be a routine part of survivorship planning. ■

DR. RUGO is director of the breast oncology clinical trials program at the Helen Diller Family Comprehensive Cancer Center of the University of California, San Francisco. She has no disclosures to report related to these topics.