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Medical
& Other News

AACR: High Cysteine Levels Linked to Lower Rates of Breast Cancer

By Brian Reid from Doctor's Guide Website

WASHINGTON, DC -- July 15, 2003 -- High serum levels of cysteine are linked to a lower risk of breast cancer, according to a presentation made here on June 12th at the 94th Annual Meeting of the American Association for Cancer Research.

These findings suggest that boosting of plasma cysteine levels might have a preventative effect on breast cancer, the researchers said.

Women in the highest quintile for measured cysteine levels in this study had a 56% lower risk of invasive or in situ breast cancer than women in the lowest quintile (P=0.002). The findings were more pronounced when only invasive cancer was considered.

"High plasma total cysteine level may predict a reduced risk of breast cancer," said lead author Shumin Zhang, MD, ScD, from Brigham and Women's Hospital, Harvard Medical School and Harvard School of Public Health, in Boston, Massachusetts, United States.

The research drew from the 27-year-old Nurses Health Study, which involves 32,000-patients. Blood samples from 712 patients with breast cancer were matched with 712 patients for the following components: age, time of day of blood draw, fasting status, month of blood draw, menopausal status, and use of postmenopausal hormones at the time of blood collection.

The protective effect of high cysteine levels appeared to be strongest in women with body mass index levels below 25 and in premenopausal women.

Preclinical studies previously suggested that cysteine precursors have an anticarcinogenic effect. Cysteine itself appears to be neurotoxic, and researchers in this field have instead looked to the precursors of cysteine for therapeutic use. Early studies of those compounds observed few side effects, although Dr. Zhang noted that it remains to be seen whether the effects seen in the Nurses Health Study will be clinically useful.

"Cysteine or its precursors might have the potential to be chemoprotective against breast cancer," she said. "But there is a lot of work that has to be done [toward] the chemoprevention of breast cancer."

[Study title: A Prospective Study of Plasma Cysteine and Risk of Breast Cancer. Abstract LB-3]

GSH-Online's comments

Cysteine is sensitive to free radicals and furthermore, it is toxic in the blood but at the opposite, it is non-toxic in the cells. The safe way to supply cysteine to cells is under the form of Cystine (an amino acid formed by two cysteine molecules attached by a disulfide bridge).