Study finds folic acid supplements linked to higher risk of prostate cancer

10 March 2009

A study led by researchers at the University of Southern California (USC) found that men who took a daily folic acid supplement of 1 mg daily had more than twice the risk of prostate cancer compared with men who took a placebo.

The finding came from a secondary analysis of the Aspirin/Folate Polyp Prevention Study (AFPP), a placebo-controlled randomized trial to determine the impact of aspirin and folic acid on colon polyps in men and women who were at high risk for the disease. The results appear in the March 10 online issue of the Journal of the National Cancer Institute.

Folic acid (folate) is a B vitamin found in many vegetables, beans, fruits and whole grains. While evidence of its ability to reduce neural tube defects in infants while taken by the mother before or during pregnancy has been well documented, its effects on other conditions are unclear.

"We know that adequate folate levels are important in the prevention of several cancer types, cardiovascular and neurological diseases," says lead author Jane Figueiredo, Ph.D., assistant professor of preventive medicine at the Keck School of Medicine of USC. "However, little has been known about its role in prostate cancer. Our objective was to investigate the relationship between folic acid supplements and dietary folate and risk of prostate cancer."

The AFPP study was conducted between 1994 and 2006 and found that aspirin reduced the risk of colon polyps while folic acid had a negative effect and increased the risk of advanced and multiple polyps. The first analysis did not address the impact of folic acid supplements on prostate cancer risk. Previous observational studies have been inconsistent. Some studies suggest that increased folate in the diet or in supplements might actually lower the risk of prostate cancer, and others have suggested no effect or even a potential harmful effect.

In the secondary analysis, researchers looked at prostate cancer incidence among 643 men who were randomly assigned to 1 mg daily folic acid supplements or placebo in the AFPP study and who enrolled in an extended follow-up study. The estimated prostate cancer risk was 9.7 percent at 10 years in men assigned to folate, compared with 3.3 percent in men assigned to placebo.

By contrast, dietary folate intake and plasma folate showed a trend toward reduced risk of prostate cancer, although the difference did not reach statistical significance. It remains unclear why dietary and circulating folate among non-multivitamin users may be inversely associated with risk, Figueiredo says.

"The synthetic form of folate, folic acid, found in supplements, is more bioavailable compared to folate from dietary sources and we know the amount of folate available is critical," she says. "Adequate levels of folate may be beneficial, but too much folate is unlikely to be beneficial."

Alternatively, these results may be due to chance, and replication by other studies is needed, she notes.

"These findings highlight the potentially complex role of folate in prostate cancer. The possibility of different effects from folic acid-containing supplements versus natural sources of folate definitely merits further investigation."

More information: Jane C. Figueiredo, Maria V. Grau, Robert W. Haile, Robert S. Sandler, Robert W. Summers, Robert S. Bresalier, Carol A. Burke, Gail E. McKeown-Eyssen, John A. Baron. "Folic Acid and Risk of Prostate Cancer: Results From a Randomized Clinical Trial." *Journal of the National Cancer Institute*. Doi: 10.1093/jnci/djp019.

Source: University of Southern California