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Antioxidants Linked to Skin Cancer in Women

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MedPage Today Action Points

- Explain to interested patients that the absolute number of skin cancer cases in this study was very small and the conclusions were based on a post hoc analysis.
- Explain to patients who are concerned about skin cancer that avoiding ultraviolet (UV) light exposure by use of protective clothing and sunblock can reduce skin damage associated with cancer.

Review

PARIS, Aug. 22 -- Women who use antioxidant supplements may be increasing their risk of developing skin cancer, according to results of a randomized trial of more than 13,000 men and women.

Anti-oxidant use in women produced a statistically significant increase in the risk of skin cancer (HR 1.68, *P*=0.03), and more than a four-fold increase in the risk of melanoma (HR 4.31, *P*=0.02), according to a report in the August issue of the *Journal of Nutrition*.

But the absolute number of cases was very small -- just 157 over more than seven years -- and antioxidant use was not associated with increased risk of skin cancer in men, said Serge Hercberg, M.D., Ph.D., of the Institut National de la Sante et de la Recherche Medicale (INSERM) and Unite de Surveillance et d'Epidemiologie Nutritionnelle, Paris, and colleagues.

The authors had previously reported that supplementation with antioxidants (beta carotene, ascorbic acid, vitamin E, selenium, and zinc) did not reduce cancer incidence, cardiovascular disease, or all cause mortality compared with placebo. (*Arch Intern Med*. 2004; 164: 2335-2342)

They pointed out in this latest analysis that skin cancers -- basal cell carcinoma and squamous cell carcinoma -- "were not considered in the cancer outcomes defined in the study protocol."

Nonetheless, they analyzed the data with respect to skin cancers because it has been suggested that antioxidants may protect against the harmful effects of UV exposure.

The Supplementation in Vitamins and Mineral Antioxidants trial recruited 7,876 women ages 35 to 60 and 5,141 men ages 45 to 60. Participants were randomly assigned to take either a daily capsule containing 120 mg of ascorbic acid, 30 mg of vitamin E, 6 mg of beta carotene, 100 mcg of selenium, and 20 mg of zinc or placebo. Participants were followed-up for a median of 7.5 years.

Among the findings:

- There were three melanoma cases among the 3,964 in the placebo arm versus 13 cases among the 3,912 taking the antioxidant supplement.
- Overall there were 51 skin cancers among women taking antioxidants versus 30 among women randomized to placebo.

Although the researchers acknowledged that their study was based on a post hoc analysis, they believe that the findings are important given the marketing of antioxidant pills, especially to "sunseekers and women in northern countries, where the use of such pills is reputed to prevent solar damage to the skin."

In this respect, they said, "our study indicated that regular intake of such nutrients, especially at doses taken by consumers of supplements in northern countries, may be associated with harmful effects."

The study also confirms that supplements are not an equivalent substitute for the "intake of a broad palette of nutrients from a well-balanced diet," the researchers concluded.

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Hercberg S et al "Antioxidant Supplementation Increase the Risk of Skin Cancers in Women but Not in Men" *J. Nutr* 2007; 137:2098-2105
