

Many studies are older, but the reality is the same.

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Chemoprevention of bladder cancer

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Abstract The data presented herein, although highly supportive for a protective role of various nutrients against bladder cancer, are far from definitive. Many authorities question the validity of current recommendations for nutritional chemoprevention against bladder cancer.

The reason for the wide variations reported in epidemiologic studies lies in the nature of observational studies. Dietary studies are limited in their conclusions because the protection afforded by the consumption of a particular nutrient may be multifactorial, with different components of the food exerting potential chemopreventive effects.

Furthermore, measuring levels of nutrients in the food intake of populations is confounded by factors that might affect these levels and also the incidence of cancer.

For example, vitamin A can come from animal or vegetarian sources. Because animal fat has been identified as a potential carcinogen in man, depending on the source of the vitamin, varying levels of protection might be deduced.

In addition, chemoprevention studies using dietary supplements are expected to have mild effects, and large studies would be required to confirm statistical significance. Even with agents such as intravesical chemotherapy, only half the studies achieve statistical significance [29].

Prospective randomized trials with a large sample size, longer follow-up, and an extended duration of treatment are needed to clarify the association between micronutrients and cancer protection. With these caveats in mind, several recommendations can be made.

Simple measures, such as drinking more fluids (especially water), can have a profound impact on the incidence of bladder cancer. Vitamins are being extensively studied in chemopreventive trials for different cancers.

There is strong evidence for a chemoprotective effect of vitamin A in bladder cancer. The authors recommend 32,000 IU/day of vitamin A initially,

with lower doses (24,000 IU) for persons less than 50 kg. Because liver toxicity is a possibility with long-term administration, the dose should be decreased to 16,000 IU after 3 years.

High doses of beta-carotene should be avoided based on a large clinical trial reporting a 25% increase in the number of cases of prostate cancer and a statistically significant increase in the incidence of lung cancer.

Vitamin B6 has been studied in several clinical trials in bladder cancer. The US-based Veterans Administration cooperative study found benefit for vitamin B6 when given as a single agent.

Data for vitamins C and E are insufficient to recommend either agent as stand-alone treatment. Nonetheless, each of these vitamins is known to have beneficial effects, including improved function of the immune system.

It is possible that only a small percentage of patients with bladder cancer respond to vitamins B6, C, or E, yet each is safe, nontoxic, and inexpensive.

In an effort to pool the efficacy of individual agents and to increase the power of study, the authors evaluated the combination of vitamins A, B6, C, and E in a double-blind trial. The observed 50% 5-year reduction in tumor recurrence was highly significant and greater than would be expected for any of the individual ingredients and suggests that combinations of nutritional agents may be most appropriate.

A large-volume study along similar lines is being conducted. Among the numerous other compounds and dietary substances purported to have chemopreventive effect, soybeans, garlic, and green tea stand out as having the greatest promise and can freely be recommended to patients.

For synthetically synthesized agents such as celecoxib, piroxicam, or DFMO, recommendations must be deferred until the results of clinical trials are conclusively in favor of their use.

Many of the dietary factors found to be protective against bladder cancer are being investigated in other cancers and are beneficial to general health.

Although naturally occurring nutrients are ideal, especially because the delicate balance of various micronutrients might be impossible to synthesize in the laboratory, the general population finds it easier to take vitamin supplements.

Unfortunately, dietary changes such as decreasing fat and increasing fruit and vegetable intake are more difficult to initiate. There is a mistaken notion that simply because an agent is naturally occurring, it cannot be as beneficial as taking a substance synthesized in the laboratory.

Even in a high-risk group such as nuclear-bomb survivors in Japan, high consumption of vegetables and fruit is protective against bladder cancer [44].

Encouraging patients to follow an essentially healthy food habit lifestyle will be a significant contribution in the fight against cancer.

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Remember we are NOT Doctors and have NO medical training.