

Green tea may affect prostate cancer progression

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According to results of a study published in *Cancer Prevention Research*, a journal of the American Association for Cancer Research, men with prostate cancer who consumed the active compounds in green tea demonstrated a significant reduction in serum markers predictive of prostate cancer progression.

"The investigational agent used in the trial, Polyphenon E (provided by Polyphenon Pharma) may have the potential to lower the incidence and slow the progression of prostate cancer," said James A. Cardelli, Ph.D., professor and director of basic and translational research in the Feist-Weiller Cancer Center, LSU Health Sciences Center-Shreveport.

Green tea is the second most popular drink in the world, and some epidemiological studies have shown health benefits with green tea, including a reduced incidence of prostate cancer, according to Cardelli. However, some human trials have found contradictory results. The few trials conducted to date have evaluated the clinical efficacy of green tea consumption and few studies have evaluated the change in biomarkers, which might predict disease progression.

Cardelli and colleagues conducted this open-label, single-arm, phase II clinical trial to determine the effects of short-term supplementation with green tea's active compounds on serum biomarkers in patients with prostate cancer. The biomarkers include hepatocyte growth factor (HGF), vascular endothelial growth factor (VEGF) and prostate specific antigen (PSA). HGF and VEGF are good prognostic indicators of

metastatic disease.

The study included 26 men, aged 41 to 72 years, diagnosed with prostate cancer and scheduled for radical prostatectomy. Patients consumed four capsules containing Polyphenon E until the day before surgery — four capsules are equivalent to about 12 cups of normally brewed concentrated green tea, according to Cardelli. The time of study for 25 of the 26 patients ranged from 12 days to 73 days, with a median time of 34.5 days.

Findings showed a significant reduction in serum levels of HGF, VEGF and PSA after treatment, with some patients demonstrating reductions in levels of greater than 30 percent, according to the researchers.

Cardelli and colleagues found that other biomarkers were also positively affected. There were only a few reported side effects associated with this study, and liver function remained normal.

Results of a recent year-long clinical trial conducted by researchers in Italy demonstrated that consumption of green tea polyphenols reduced the risk of developing prostate cancer in men with high-grade prostate intraepithelial neoplasia (HGPIN).

"These studies are just the beginning and a lot of work remains to be done, however, we think that the use of tea polyphenols alone or in combination with other compounds currently used for cancer therapy should be explored as an approach to prevent cancer progression and recurrence," Cardelli said.

William G. Nelson, V., M.D., Ph.D., professor of oncology, urology and pharmacology at the Johns Hopkins Kimmel Cancer Center, believes the reduced serum biomarkers of [prostate cancer](#) may be attributable to some sort of benefit relating to green tea components.

"Unfortunately, this trial was not a randomized trial, which would have been needed to be more sure that the observed changes were truly attributable to the [green tea](#) components and not to some other lifestyle change (better diet, taking vitamins, etc.) men undertook in preparation for surgery," added Nelson, who is also a senior editor for *Cancer Prevention Research*. However, "this trial is provocative enough to consider a more substantial randomized trial."

In collaboration with Columbia University in New York City, the researchers are currently conducting a comparable trial among patients with breast cancer. They also plan to conduct further studies to identify the factors that could explain why some patients responded more dramatically to Polyphenon E than others. Cardelli suggested that additional controlled clinical trials should be done to see if combinations of different plant polyphenols were more effective than Polyphenon E alone.

"There is reasonably good evidence that many cancers are preventable, and our studies using plant-derived substances support the idea that plant compounds found in a healthy diet can play a role in preventing cancer development and progression," said Cardelli.

Source: American Association for Cancer Research

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