ASCO: Component in green tea may help reduce prostate cancer in men at high risk

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Prostate cancer is the second most common type of cancer in men and is predicted to result in an estimated 220,00 cases in the United States in 2015. In recent years, an emphasis has been placed on chemoprevention - the use of agents to prevent the development or progression of prostate cancer. A team of researchers led by Nagi B. Kumar, Ph.D., R.D., F.A.D.A. at Moffitt Cancer Center recently published results of a randomized trial that assessed the safety and effectiveness of the active components in green tea to prevent prostate cancer development in men who have premalignant lesions. The results will be presented at the 2015 American Society of Clinical Oncology (ASCO) Annual Meeting in Chicago.

Twenty percent of green tea is consumed in Asian countries where prostate cancer death rates are among the lowest in the world and the risk of prostate cancer appears to be increased among Asian men who abandon their original dietary habits upon migrating to the U.S.

Laboratory studies have shown that substances in green tea called, "catechins" inhibit cancer cell growth, motility and invasion, and stimulate cancer cell death. Green tea catechins also prevent and reduce tumor growth in animal models. Epigallocatechin-3-gallate (EGCG) is the most abundant and potent catechin found in green tea responsible for these cancer prevention effects.

The goal of this trial was to evaluate if a one-year intervention with green tea catechins could suppress prostate cancer development in men

who had high-grade intraepithelial neoplasia (HGPIN) or atypical small acinar proliferation (ASAP). The researchers used decaffeinated green tea capsules called Polyphenon E that contained a mixture of catechins that predominantly contained EGCG at a dose of 200 mgs twice a day.

The researchers compared Polyphenon E in 49 men to placebo tablets in 48 men over a 1 year treatment period. Overall, the difference in the number of prostate cancer cases at the end of 1 year between the two treatment groups was not statistically significant. However, in men who only had HGPIN at the beginning of the trial, they observed a lower combined rate of ASAP and prostate cancer development with Polyophenon E. ASAP is an entity that reflects a broad group of lesions in the prostate with insufficient changes in the cells to be definitively diagnosed as prostate cancer. Additionally, men on Polyphenon E had a significant decrease in prostate-specific antigen (PSA) levels. PSA is a biomarker that in combination with other risk factors is used to screen patients for prostate cancer, and high levels signify a higher risk of prostate cancer.

The Moffitt researchers observed a significant increase in the levels of EGCG in the blood plasma of men on Polyphenon E, and the capsules at this dose were tolerated in this group of men.

The ASCO poster session will take place Monday, June 1, 1:15-4:45 p.m. in S Hall A. The study was published in the April 14 issue of the journal *Cancer Prevention Research*. Funding support was received from the National Institutes of Health/National Cancer Institute (R01 CA12060-01A1).

Provided by H. Lee Moffitt Cancer Center & Research Institute