

BENEFICIAL EFFECTS OF GREEN TEA ON CANCER: REVIEW

Rashmi Kadu

Assistant professor, Department of Forensic Science,
School of Sciences, B-II, Jain (Deemed to be University), Bangalore-560027, India.
Email Id: kd.rashmi@jainuniversity.ac.in

Abstract

Green tea has been studied by researchers as a possible protector against cancer. This study focuses on research of humans with green tea. Polyphenols, chemicals that serve as strong antioxidants, are present in green tea. Varying findings have been seen in epidemiological and human trials. Thirty-one trials of humans and four articles have been reviewed. Three of the five colon cancer reporting reports observed an inverse correlation and one reported a favourable association. Just one of four studies showed an inverse correlation for rectal cancer; elevated chances were seen in two of the studies. In two out of two trials, an opposite correlation is proposed for urinary bladder cancer. Of the various studies investigating the relationship between green tea and cancer of the stomach, few indicate an inverse association, and some suggest a favourable association. An opposite relationship between green tea and stomach cancer is supported in the most detailed of these studies. In two of the three studies, pancreatic cancer studies show an opposite correlation. With green tea and esophageal cancer, a significant inverse effect was found. Studies of lung cancer have shown an inverse effect on Okinawan tea, but another study has shown a tentatively elevated chance. Although human trials have their limits, further study into the impact of green tea and cancer has been warranted by science.

Keywords: Black, Cancer, Consumption, Green, Tea, Health care, Patients.

I. INTRODUCTION

Cancer is the second important purpose of dying inside the America, coronary heart ailment being the first. On the grounds that 1990, about 10 million new most cancers instances had been identified inside the US Alone, with about 4 million cancer deaths. There has been a steadfast upward thrust within the cancer mortality rate within the America all through the past 1/2-century. The monetary expense of cancer is big to the man or woman arid society. Moreover, scientific research shows that up to one-1/3 of the 560,000 predicted most cancers deaths in 1997 were associated with nutrition and nutritional factors [1].

Antioxidants are most of the nutritional factors that may play a position in cancer safety. Inexperienced tea is an antioxidant-carrying plant that has been arousing increased attention in cancer studies. Not like preceding evaluations that still blanketed black tea and/or animal studies of their ordinary analyses, this review uniquely focuses on human research and green tea as a likely protectant against cancer [2]. Tea is grown in about 30 international locations and, next to water, is the most broadly ate up beverage within the global. Even though there

may be handiest one plant (camellia sinensis), tea is synthetic as black (seventy eight %), green (20%), or oolong (2%). While black tea is greater famous in western international locations, inexperienced tea is in the main consumed in Asian nations, which include Japan, China, and India, and some international locations in north Africa and the center east, despite the fact that India also produces and consumes large amounts of black tea. Leaves meant for green tea are picked by the equal technique as those picked for black tea. Black tea is fermented; green tea isn't always. Fermentation alters the chemical structure of the tea leaf, permitting fundamental taste attributes to emerge [3].

II. GREEN TEA AND PANCREATIC CANCER

In any such research, few researchers indicated that hazard of most cancers become substantially reduced in ladies with ordinary inexperienced tea intake and amongst men and women with expanded amount and period of green tea consumption. The work of Ji and co-workers turned into the most important and most complete of those 3 research. Another study mentioned a sizeable inverse affiliation of pancreatic cancer with inexperienced tea consumption, however the article turned into in eastern, with English in summary form handiest; accordingly authentic facts had been not to be had. Mizuno and pals confirmed extended risk with high green tea consumption (>five cups/day). Thus, of the three posted research on inexperienced tea and pancreatic most cancers, suggested an inverse affiliation and one pronounced a nice association. Similarly studies is warranted to clarify whether or not green tea can be inversely related to pancreatic most cancers [4].

Green Tea and Colorectal Cancer

Several research had been accomplished on tea ingesting and colorectal cancer, with little or inconclusive evidence of an affiliation. However, lots of these protected black tea. While narrowing the studies to inexperienced tea, there may be an inverse effect. Few researchers observed a proposal of an inverse affiliation with expanded inexperienced tea consumption and adenomatous colon polyps, however it was now not statistically full-size. As reported by means of blot and co-people, watanabe and associates stated a fantastic dating with colon and rectal cancers; however, the unique paper turned into in Japanese and there has been no English summary. Extra case-manage research pronounced inverse findings with colon most cancers. In the sort of, an inverse association was additionally pronounced for rectal cancer, but inside the other a high quality affiliation with rectal cancer become seen. In those latter studies, increased tea intake become associated with decreased risk of colon most cancers for both sexes. Overall, among five research reporting on the affiliation of inexperienced tea and colon cancer (one focused on adenomatous polyps), three determined an inverse association and one pronounced a high quality association. For rectal cancer, most effective considered one of four studies suggested a statistically large inverse association; multiplied risks had been seen in of the studies [5].

Green Tea and Stomach Cancer

One ecological and 4 case-control studies suggested an inverse association with belly cancer, with increased consumption related to decreased threat. A further take a look at by way of Kono and friends discovered a wonderful affiliation with intermediate consumption; yet a decreased hazard in belly most cancers become mentioned among people with excessive inexperienced tea intake [odds ratio (OR) =1.2 (intermediate = 5-9 cups/day) and 0.4 (high >10 cups/day)]. Findings were effective in case-manipulate and one cohort take a look at. Of these, the original

cohort observe turned into no longer to be had for assessment, inasmuch as this research is still in development. No association became determined in one case-control study. In one of the maximum thorough green tea case-control studies of stomach most cancers, Few researchers looked at type of tea, age whilst ordinary tea ingesting started out, frequency of new batches of tea used according to day, amount in step with batch, duration per batch, and strength and temperature of the tea.

After adjustment for confounders, evaluating drinkers of inexperienced tea with non-drinkers, the risk turned into decreased and similarly decreased with an growing number of recent batches of green tea fed on each day. On this, the most important collection of case-manipulate studies of green tea and stomach cancer to this point, green tea consumption became associated with decrease chance. Among inexperienced tea drinkers, the danger did no longer rely on the age when habitual tea ingesting began. The researchers counselled that this implied that green tea might also disrupt gastric carcinogenesis on the intermediate and late degrees. They had been thorough in the elements which could have an impact on real green tea intake, despite the fact that they did not explain these nicely sufficient to the readers (they assumed that the reader is aware of those). Curiously, drinking warm tea changed into related to an improved danger of stomach cancer, whereas consuming heat or bloodless tea became related to reduced chance (OR = 0.51 in heat or bloodless to OR = 1.18 in boiling warm) in comparison with non-drinkers. This coincides with the said advantageous association among intake of particularly warm meals and elevated stomach cancer hazard in Italy and that among consuming warm mate and cancer of the top gastrointestinal tract [6].

Green Tea and Urinary Bladder Cancer

The variety of studies on green tea and urinary bladder most cancers is limited. In one of these studies, a case-control examine, inexperienced tea become associated with decreased bladder most cancers danger in women, but now not in men. The other turned into a study of prognostic factors in a series with patients with bladder cancer. In this look at, sufferers who drank inexperienced tea had a considerably better 5-yr survival price than those who did not [7].

Green Tea and Lung Cancer

Like urinary bladder most cancers, restrained studies were completed on inexperienced tea and lung cancer. Few researchers stated that Okinawan tea (just like inexperienced tea but partly fermented) turned into associated with reduced lung cancer threat, especially in girls. This association was observed particularly for squamous cell carcinoma. Researchers did not ask subjects how plenty green tea they drank, in order that they could not determine whether consequences have been from one or a mixture of each teas. In the different look at, researchers looked at black and inexperienced tea and observed a statistically considerable multiplied lung cancer hazard among green tea drinkers.

Black tea also increased chance. Consequences have been said as tentative, because best 23 cases (11.5%) and thirteen controls (6.5%) claimed to be normal inexperienced tea drinkers. The authors stated that they did no longer acquire records on tea under the influence of alcohol at some stage in the day and, as a result, had been not able to perform a dose-reaction analysis [8].

Green Tea, Temperature, and Esophageal Cancer

Consequences of inexperienced tea and esophageal cancer research are combined, with fine and negative findings. Few researchers determined multiplied risk with elevated tea strength. The simplest exceptional inexperienced tea observe is that of researchers, which turned into part of a bigger multicenter, case-manipulate study that included pancreas, colon, and rectal most cancers. In this study, an inverse association of inexperienced tea drinking on hazard of esophageal most cancers become discovered among ladies. In men, the OR was regular with an inverse association however changed into not statistically good sized. Ors have been also predicted among those who neither drank alcohol nor smoked, with considerable decreases in danger for tea consuming for men and women [9]. The warmer the tea or beverage, the extra the danger, and the risk became even greater with improved consumption of boiling warm tea. Even though not green tea, the connection of the extreme temperature of meals and liquids was showed by way of researchers. The green tea-esophageal cancer relationship deserves further research due to the encouraging findings of few researchers, yet presently the most powerful relationship links particularly warm temperatures and extended cancer threat [10].

III. CONCLUSION

Green tea is fairly inexpensive, simple to use, trustworthy, and proven to have an inverse association in numerous cancers. It's been speculated that the low jap lung most cancers charge, notwithstanding high smoking prices, is attributed to inexperienced tea intake. Animal research provide promising results in skin cancer prevention with EGCG topical remedy. In vitro studies display sizable protection with green tea polyphenolic extracts in numerous cancer types. In vitro can also vary from in vivo, however, regarding results and man or woman compliance. Separating EGCG in its natural shape and developing it as a cancer preventive agent are luxurious. If the combination of polyphenols contained in inexperienced tea extract has a robust inhibitory interest just like EGCG, it'd be more practical to use inexperienced tea and/or green tea extract for most cancers prevention in humans.

The constraints of the human research are that they are particularly case-control research, depending in large part on interview and difficulty responses. The various findings indicate an inverse affiliation between inexperienced tea and most cancers, but the effect of tea intake on cancer may additionally rely on the causative factors of the specific most cancers. Extra complete research, inclusive of cohort studies, are hard to greater very well compare the affiliation between green tea and cancer. Nevertheless, the in vitro, animal, and human research examined offer promising results worthy of future research on capability most cancers prevention in people.

IV. REFERENCES

- [1] J. L. Bushman, "Green tea and cancer in humans: A review of the literature," *Nutrition and Cancer*. 1998, doi: 10.1080/01635589809514697.
- [2] C. S.M., T. P.T., K. R., and N. I., "Beneficial effects of green tea: A literature review," *Chin. Med.*, 2010.
- [3] Y. Clement, "Can green tea do that? A literature review of the clinical evidence," *Preventive Medicine*. 2009, doi: 10.1016/j.ypmed.2009.05.005.
- [4] C. S. Yang and X. Wang, "Green tea and cancer prevention," *Nutrition and Cancer*. 2010, doi: 10.1080/01635581.2010.509536.

- [5] K. Boehm *et al.*, “Green tea (*Camellia sinensis*) for the prevention of cancer,” *Cochrane Database of Systematic Reviews*. 2009, doi: 10.1002/14651858.CD005004.pub2.
- [6] V. W. Setiawan *et al.*, “Protective effect of green tea on the risks of chronic gastritis and stomach cancer,” *Int. J. Cancer*, 2001, doi: 10.1002/ijc.1231.
- [7] A. Henriques *et al.*, “The effects of whole green tea infusion on mouse urinary bladder chemical carcinogenesis,” *Iran. J. Basic Med. Sci.*, 2014, doi: 10.22038/ijbms.2014.2249.
- [8] C. Musial, A. Kuban-Jankowska, and M. Gorska-Ponikowska, “Beneficial properties of green tea catechins,” *Int. J. Mol. Sci.*, 2020, doi: 10.3390/ijms21051744.
- [9] M. Wu *et al.*, “Green tea drinking, high tea temperature and esophageal cancer in high- and low-risk areas of Jiangsu Province, China: A population-based case-control study,” *Int. J. Cancer*, 2009, doi: 10.1002/ijc.24142.
- [10] J. M. Yuan, “Green tea and prevention of esophageal and lung cancers,” *Molecular Nutrition and Food Research*. 2011, doi: 10.1002/mnfr.201000637.