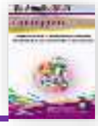

Therapeutic Potential of Epigallocatechin-3-Gallate in Cancer: A Systematic Review of Human Cancer

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Abstract

In an effort to prevent and manage various types of cancer, the following study seeks to synthesize the results of various clinical trials on the efficacy and safety of the use of epigallocatechin 3-gallate. The systematic review method was employed in the following study as an effort to review the results of various clinical trials on the therapeutic response and safety of the use of EGCG in cancer patients, strictly following the PRISMA 2020 criteria. From the results of the search in the five online databases, a total of 293 articles were identified, from which seven clinical trials published between 2014 and 2024 were identified. The results of the clinical trials on the efficacy and safety of the use of EGCG in cancer patients showed that EGCG has the potential to reduce the levels of PSA in various groups of patients with prostate cancer, as well as reduce the occurrence of acute radiation esophagitis in patients with advanced lung cancer, although the results were not statistically significant. Although EGCG has an excellent safety profile with no serious side effects reported, its definitive therapeutic efficacy remains unclear, necessitating randomized controlled clinical trials to clarify its clinical relevance and health implications.

Keywords: Cancer, Clinical Trial, Epigallocatechin-3-Gallate (EGCG), Public Health, Systematic Review.

INTRODUCTION

Globally, public health challenges today still face the same problem, namely cancer as the leading cause of morbidity and mortality. However, there are differences between men and women in terms of the types of cancer themselves. Men are more commonly affected by lung, liver, and colorectal cancer, while women are more commonly affected by breast, lung, and colon cancer (Nierengarten, 2024; Panigrahi et al., 2025; Siegel et al., 2025). However, sociodemographic factors play a role in determining the distribution of cancer types across regions. In this case, several factors should be considered, including the age of the population, income level, lifestyle, and environmental factors. (Brown et al., 2023; Kocarnik et al., 2022; Sung et al., 2021).

In Indonesia itself, the incidence of various types of cancer is increasing, although breast cancer still dominates (36.1%). Nine out of ten types of cancer that are common in Indonesia vary greatly, ranging from cervical cancer, nasopharyngeal cancer, lung cancer, rectal cancer, leukemia, ovarian cancer, lymphoma, colon cancer, and prostate cancer. (Rusli et al., 2023). The causes of this spread are not fully understood and are certainly multifactorial, but it can be seen through common factors that play a role in carcinogenesis, including genetic, environmental, and lifestyle factors (Bray et al., 2024; Hanahan, 2022).

In an effort to treat these various types of cancer, chemotherapy is a commonly used approach. Although widely used, its use often has significant effects on the body, including bone marrow suppression, neuropathy, mucositis, nausea, vomiting, and hair loss (Anand et al., 2023; DeVita et al., 2022). This chemotherapy approach also faces a major obstacle to therapeutic success due to the emergence of multidrug resistance (MDR), which contributes to the high treatment failure rate (Catalano et al., 2022; Murray et al., 2022).

Given these risks and the high failure rate, numerous studies have sought to identify other anticancer agents, particularly bioactive compounds derived from plants. This can be seen, for example, in several studies that have shown that mechanisms such as apoptosis induction, angiogenesis inhibition, and modulation of signaling pathways involved in cancer cell proliferation and metastasis in phytochemical compounds have anticancer activity (Abdulridha et al., 2020; Banerjee et al., 2023; Dehelean et al., 2021). In addition to phytochemical compounds, epigallocatechin-3-gallate (EGCG), the main catechin compound in green tea known for its antioxidant and anti-inflammatory properties, has also been extensively studied in various research studies (Capasso et al., 2025; Chen et al., 2020). Various other studies have also reported that EGCG combined with chemotherapy agents has an additive or synergistic effect and has the potential to reduce toxicity, because EGCG itself has chemopreventive and therapeutic potential through the modulation of various molecular pathways that regulate angiogenesis, proliferation, and apoptosis of cancer cells (Almatroodi et al., 2020; Niu et al., 2026; Syalsabila & Manafe, 2024).

However, there is one thing to note. On the one hand, EGCG has great potential, as shown by previous studies. On the other hand, these studies remain mixed in terms of human clinical evidence and yield inconsistent results. Therefore, in this case, research systematically examining the available clinical evidence is needed to assess the extent to which EGCG has therapeutic relevance in clinical practice and public health.

Because of the urgency, the aim of the study is to carry out a systematic review of the various literatures to synthesize clinical trial data regarding the effectiveness and safety of epigallocatechin-3-gallate (EGCG) in the prevention and management of the various forms of cancer that affect the human body. The aim of the study is, therefore, to create a more structured scientific basis for assessing the potential of EGCG as a supportive treatment for the prevention and management of cancer, and to provide a guideline for further research on the same.

METHODS

Materials and Study Design

The study was conducted through a systematic review, with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 as the guideline for compiling the study. A comprehensive literature search was conducted from October to November 2024 using PubMed Central, Wiley Online Library, ClinicalKey, Cochrane Library, and SpringerLink databases. The search strategy was developed using a combination of Boolean operators as follows: ("Epigallocatechin-3-gallate" or "EGCG") and ("cancer" or "carcinoma" or "malignancy") and ("clinical trial" or "randomized controlled trial") and ("treatment response" or "therapy response" or "clinical outcome"). This strategy was adapted to the characteristics of each database.

Inclusion criteria included: (1) human clinical trials (randomized controlled trials or non-randomized clinical trials); (2) patient populations diagnosed with cancer; (3) interventions involving epigallocatechin-3-gallate (EGCG) as a single or adjunctive therapy; (4) reported measurable clinical outcomes related to therapy response; and (5) were published in English between 2014 and 2024.

Exclusion criteria included: (1) in vitro or animal studies; (2) review articles, meta-analyses, editorials, or case reports; (3) studies without a clear EGCG intervention group; (4) articles for which full text was unavailable; and (5) studies that did not report relevant clinical outcomes. The selection process consisted of two stages: title and abstract screening, followed by full-text assessment according to inclusion and exclusion criteria.

This review used the PICO (Population, Intervention, Control, Outcome) approach, with the following details: P (Population) - cancer patients; I (Intervention) - epigallocatechin-3-gallate; C (Control) - control group without EGCG intervention or standard therapy; and O (Outcome) - response to therapy and safety-related clinical outcomes.

Risk of bias assessment was performed using the Cochrane Risk of Bias Tool (RoB 2) for randomized controlled trials, which evaluates bias in the randomization process, deviation from the intended intervention, missing outcome data, outcome measurement, and selective reporting. For non-randomized studies, appropriate quality assessment tools were used. The results of the risk-of-bias assessment served as the basis for interpreting the findings.

Statistical Analysis

Relevant data were extracted from selected studies using a structured data extraction form. Key characteristics collected included study type, number and characteristics of patients, cancer type, dose and duration of EGCG administration, control group, evaluation method, and reported clinical outcomes.

Given the heterogeneity of study designs, cancer types, intervention doses, and reported outcomes, data synthesis was conducted narratively, and no quantitative meta-analysis was performed. The primary outcome analyzed was response to therapy, while secondary outcomes included safety parameters and reported side effects. The credibility and consistency of findings were analyzed by considering the risk of bias of each study and the consistency of results across studies.

RESULTS

The database search yielded 293 initial articles (23 *PubMed Central* articles, 187 *Wiley Online Library* articles, 6 articles from ClinicalKey, 65 articles from *Cochrane*, and 12 articles from *SpringerLink)*. Due to duplicate titles (12 papers) and incomplete research (5 articles in Cochrane), 269 articles were eliminated, while 17 articles were eliminated for having irrelevant titles. Seven publications met the eligibility requirements set forth in this systematic review after the abstracts and paper titles were examined (Figure 1).

The seven selected studies were conducted in the USA (9,10,12), UK (11), China (Zhao,Zhao) and India (Zhu). There were 1306 cancer patients (350 prostate cancer patients across 4 studies and 203 lung cancer patients across 3 studies).

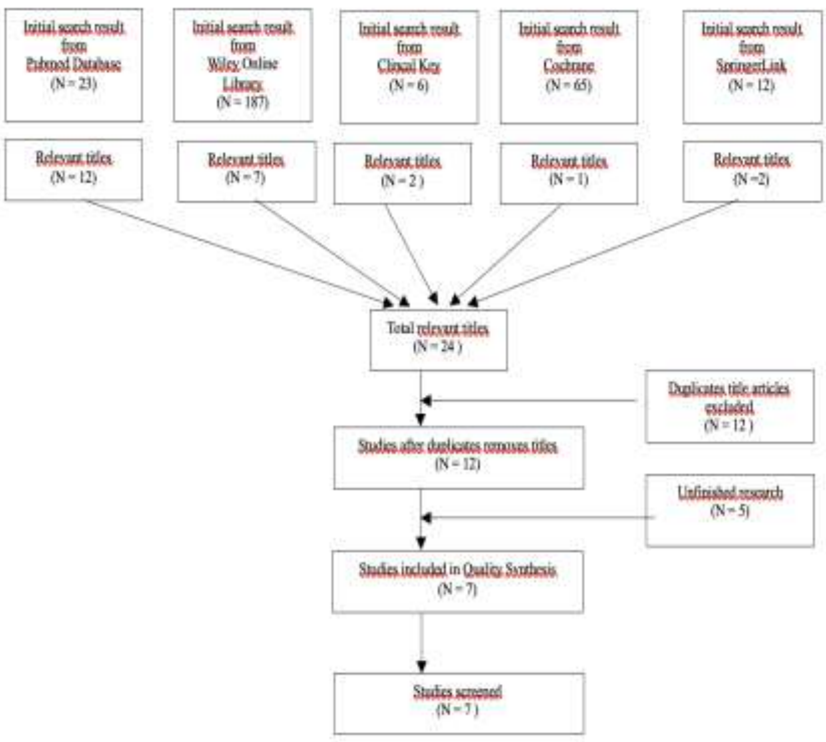

Figure 1. The article's selection flow diagram

The figure illustrates a PRISMA flow diagram detailing the systematic process of literature screening and selection starting from multiple databases. Initially, the search identified 24 relevant titles across five databases, including PubMed. During the screening process, 12 duplicate articles were identified and excluded, leaving 12 studies for further evaluation. Subsequently, 5 studies were excluded as unfinished research, further narrowing the pool of articles. Ultimately, 7 studies were successfully screened and included in the final Quality Synthesis for the research. Four prostate cancer studies with primary or secondary outcomes of PSA levels and other outcomes were included in this systematic review.

Findings in Prostate Cancer (PSA Changes and Related Biomarkers)

Four studies evaluated the effectiveness of EGCG or green tea extract on PSA changes and proliferation biomarkers in patients with a risk for or diagnosis of prostate cancer. Kumar et al. (2015) in a randomized, placebo-controlled trial in 97 men with HGPIN or ASAP reported no significant difference in prostate cancer incidence between the Polyphenon E® (400 mg EGCG/day) and placebo groups (10.2% vs. 18.8%; $p = 0.250$). However, there was a greater decrease in serum PSA in the intervention group than in the placebo group (difference: -0.87 ng/mL; 95% CI: -1.66 to -0.09). Furthermore, plasma EGCG concentrations increased significantly at 6 and 12 months in the intervention group.

Zhang et al. (2016) evaluated supplementation with EGCG (600 mg/day), fish oil (FO), a combination of the two, or placebo in 89 men scheduled for a repeat prostate biopsy. The study found no significant differences in PSA levels between groups after the intervention. However, a significant decrease in the proliferation marker Ki-67 was observed in the EGCG group ($p = 0.02$), while an increase in FAS was observed in the placebo group ($p = 0.03$). Based on these findings, it can be said that EGCG has a lesser effect on changes in serum PSA and a greater effect on tissue biomarkers.

Several other studies have also examined the effects of green tea on prostate health. Lane et al. (2018) studied a group of men with high PSA levels, even though they did not have cancer. They were asked to consume green tea extract (equivalent to 3 cups a day) and lycopene for six months. The results showed that their bodies did absorb the beneficial substances from green tea (EGCG), but unfortunately, their PSA and blood pressure levels were not much different from those of the group that did not drink green tea.

Another research done by Henning et al. (2020), which focused on 31 patients with prostate cancer, showed similar results. In their research, it was shown that PSA levels did not decrease significantly before surgery. In conclusion, although there are a few signs of reduced

PSA levels, the results are not significant. The effects of green tea are more directly related to improving prostate tissue.

Findings in Lung Cancer (Esophagitis and Clinical Outcomes)

Three other studies, in addition to the above-mentioned ones, assessed the efficacy of EGCG in radiotherapy-treated patients with advanced lung cancer, with a special emphasis on acute radiation esophagitis. For instance, in a study done by Zhao et al. (2015), it was mentioned that oral administration of EGCG at a dose of 440 μmol/L, three times a day, during radiotherapy was proven to be safe and effective in reducing the severity of acute radiation esophagitis in stage IIIA and IIIB lung cancer patients. A follow-up study by Zhao et al. (2019) also aimed to compare EGCG administration as a preventive measure after the onset of mild symptoms with the conventional regimen (mLDG). The results of this study showed that pain scores (API) and dysphagia (ADI) were significantly lower in the EGCG group than in the conventional group, although the overall response difference between the two groups was not always significant.

The most recent study in this context is that conducted by Zhu et al. (2021), which also used a similar three-group design. Zhu et al. reported that the EGCG group had a higher Objective Response Rate (ORR) than the conventional therapy group ($p = 0.045$). The study also did not find a significant prolongation in overall survival (OS) or progression-free survival (PFS). Interestingly, although the five-year PFS rate appeared higher in the EGCG group (33% vs 9.3%), the difference in the five-year OS rate between the two groups was very small (30.3% vs 33.3%). Consistently, the esophagitis index and pain scores were lower in the EGCG group than in the standard-therapy group.

Overall, studies in lung cancer demonstrate a relatively consistent benefit of EGCG in reducing radiation-induced esophagitis and alleviating pain and dysphagia. Its effects appear more pronounced in decreasing treatment-related toxicity and improving quality of life than in enhancing long-term survival. Preventive administration may offer greater benefit than post-symptom use, although differences are not always statistically significant. Despite a favorable safety profile, the small sample sizes and heterogeneity of study designs limit generalizability, underscoring the need for larger, well-designed clinical trials.

Table 1. Summary of Data Description from The Included Studies

Study	Subject Criteria	Intervention	Outcome
Kumar et al. (2015).	97 male patient aged 30–80 years with a biopsy-based diagnosis of high-grade prostatic intraepithelial neoplasia (HGPIN) or atypical	Polyphenon E® (PolyE) including 400 mg daily of (-)-epigallocatechin-3-gallate (EGCG).	PCa rates: 5/49 (10.2%) Poly E compared to a placebo on 9/48 (18.8%) ($p = 0.250$).

Study	Subject Criteria	Intervention	Outcome
	small acinar proliferation (ASAP) within three months prior to randomization.		Serum PSA: In comparison to the placebo group, the PolyE group's PSA differential was -0.87 ng/ml (95%CI: -1.66 −0.09). Concentrations of plasma catechin EGCG were higher in the PolyE group than in the placebo group at 6 ($p < 0.001$) and 12 months ($p = 0.002$).
Zhang et al. (2016).	89 male patient scheduled for a follow-up prostate biopsy after a negative first test.	Samples were divided into four groups (for 90 days before the scheduled follow-up biopsy) : - FO by itself (1.9 g DHA+EPA daily) - EGCG by itself (600 mg daily) - The combination of EGCG and FO - A placebo	Ki-67 occurred in the EGCG group (p=0.02) FAS occurred in the placebo group (p=0.03) No. difference in PSA after intervention between the FO, EGCG and placebo groups.
Lane et al. (2018).	133 male patient having PSA readings between 2.0 and 2.974 ng/mL or a negative biopsy with a reading between 2.975 and 19.95 ng/mL	lycopene-rich meals or supplements (15 mg lycopene or placebo) and green tea beverage (3 cups) or pills (600 mg EGCG or placebo) for six months.	The lycopene and green tea groups did not vary in blood pressure or PSA levels.
Henning et al. (2020).	31 male patient with prostate cancer without 5-alpha reductase inhibitors, antiandrogens, luteinizing hormone-releasing hormone agonists, or a history of hepatitis, alcoholism, or other serious medical or mental disorders	For four weeks before a prostatectomy, take 800 mg of quercetin (GT + Q) or a placebo (GT + PL) together with 1 gram of GTE (830 mg GTP) every day.	Following three weeks of intervention, there was no discernible drop in PSA or variation in plasma PSA across the groups.
Zhao et al. (2015).	37 patients were diagnosed with pathologically unresectable stage IIIA or stage IIIB lung cancer, aged >18 years with ECOG PS 0–1. Patients had not received prior systemic chemotherapy or radiation to the thorax.	EGCG was dissolved in 0.9% saline and stored at 4 °C. For esophageal application, patients were asked to slowly swallow 15 ml of EGCG solution with a concentration of 440 lmol/L three times a day during radiation.	EGCG taken orally is a safe and efficient treatment for acute radiation-induced esophagitis.
Zhao et al. (2019).	83 patients with stage IIIA or medically inoperable lung cancer aged 18 years with a Karnofsky score of 70.	Patients were divided into three groups: - Group A: EGCG (440 lmol/L) given simultaneously with RT, - Group B: EGCG (440 lmol/L) given immediately after extremely mild esophagitis occurred during RT - Group C: mLDG group (lidocaine 0.16 mg/mL,	EGCG can effectively alleviate acute radiation esophagitis and the API and ADI scores were much lower in EGCG-treated individuals.

Study	Subject Criteria	Intervention	Outcome
		dexamethasone 0.02 mg/mL, and gentamicin 0.16 mg/mL) given immediately after extremely mild esophagitis occurred during RT.	
Zhu et al. (2021).	83 lung cancer patients, including 45 non-SLCL lung cancer patients and 38 SCLC patients	Patients were divided into three groups: - Group A: EGCG (440 lmol/L) given simultaneously with RT, - Group B: EGCG (440 lmol/L) given immediately after extremely mild esophagitis occurred during RT - Group C: mLDG group (lidocaine 0.16 mg/mL, dexamethasone 0.02 mg/mL, and gentamicin 0.16 mg/mL) given immediately after extremely mild esophagitis occurred during RT	The EGCG group had a greater objective response rate (ORR) (p = 0.045). 5-year PFS was 9.3% with traditional treatment and 33% with EGCG. 30.3% against 33.3% was the 5-year OS. Compared to patients receiving conventional therapy, those receiving EGCG had reduced mean esophagitis and adjusted pain indices..

There are three studies related to the effectiveness of EGCG on lung cancer included in this systemic review. The outcomes of the three studies vary: the effects of EGCG on pain and the incidence of acute radiation-induced esophagitis, reported in two studies, and the effects of EGCG on therapy response rate, PFS, OS, and the effectiveness of EGCG in treating esophagitis are all factors to consider.

Clinical trials conducted by Zhao et al. (2015, 2019) and Zhu et al. (2021) generally indicate that administering EGCG during radiotherapy in patients with advanced lung cancer may reduce the severity of acute radiation esophagitis without causing significant side effects. In earlier studies with smaller sample sizes, oral EGCG administration during radiotherapy was associated with a reduction in esophageal symptoms and was deemed safe for use in conjunction with 3D-CRT or IMRT. Follow-up studies with different intervention group designs demonstrated that both preventive and post-emergence administration of EGCG provided clinical benefits compared to conventional regimens. Measurements using an NRS-based pain and dysphagia index consistently showed lower scores in the EGCG group than in the control group, though the overall response rate between groups was not always significant. Nevertheless, a trend of symptom improvement was observed in the EGCG group. In this case, the findings demonstrate the potential to reduce the toxicity of radiotherapy in lung cancer through EGCG as a supportive therapy. This trend is supported by various follow-up studies with much larger sample sizes, but with varying long-term results. The EGCG group in the study by Zhu et al. (2021) was also reported to have a higher Objective Response Rate (ORR) than conventional therapy, but the study noted no significant prolongation of overall survival (OS) or progression-free survival (PFS). However, the five-year PFS rate in the EGCG group was higher than that in the control group, although the difference in five-year OS was relatively small. In addition, the esophagitis index and pain score remained lower in the EGCG group, consistent with previous studies. Based on these findings, it can be said that reducing toxicity and improving quality of life are the main benefits of EGCG, compared to its effect on improving long-term survival outcomes. The differences between studies are likely to be influenced by differences in patient characteristics, timing of intervention, and sample size.

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When viewed as a whole, the synthesis of the three studies above shows an interesting pattern: EGCG is effective in reducing the severity of radiation esophagitis and related symptoms in advanced lung cancer patients undergoing radiotherapy. The main benefits of EGCG are more evident in subjective improvements, such as reduced pain and difficulty swallowing (dysphagia), while its impact on long-term survival remains unclear. In terms of timing of administration, a preventive strategy appears to be more beneficial than treating symptoms once they have appeared, although the difference is not always statistically significant. However, the good news is that EGCG has been proven to be very safe for adjunct therapy because of its few harmful side effects. Unfortunately, the results of the studies cannot be generally applied due to the diversity of methods and the small number of samples. Therefore, large-scale clinical studies are needed to rigorously confirm the effectiveness of EGCG in treating lung cancer patients.

DISCUSSION

Interventions in the cancer development process should be instituted as early as possible, and this can be done through the administration of chemopreventive agents that help disrupt the process. In a number of studies using epigallocatechin-3-gallate (EGCG), it has been shown that EGCG can intervene to prevent cancer formation, as it influences several carcinogenesis processes. However, it should be noted that there is a caveat: it is not clear whether these interventions will translate into clinical benefits. Interpretation of previous studies showing the diversity of clinical trial results must be done cautiously; this aims to avoid any form of excessive generalization of preclinical data to the clinical context. Several factors likely contribute to inconsistent results, including small sample sizes, short intervention durations, and variations in dosage and formulation across studies (Siddiqui et al., 2015; C. Zhang et al., 2022).

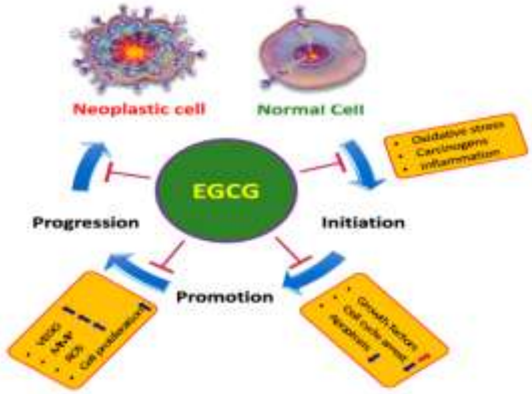

Figure 2. The Role of Epigallocatechin-3-Gallate (EGCG) in Inhibiting the Carcinogenesis Process

Source: (Almatroodi et al., 2020).

One study on prostate cancer did reveal an interesting finding, suggesting that EGCG supplementation has a significant effect on PSA levels. However, most other studies have shown inconsistent results and no significant effect from EGCG supplementation; in fact, there was no difference compared to a placebo when the intervention was short-term—lasting only 3 weeks to 6 months (Hao et al., 2022; Sharifi-Zahabi et al., 2021). Although the results suggest this, they must be interpreted with caution, as the decrease in PSA levels was relatively small; therefore, this cannot be taken as definitive proof of the clinical benefits of EGCG. And of course, given the diversity of the existing literature—where the studies themselves involve a highly diverse participant population, coupled with variations in interventions (not limited to EGCG administration alone), as well as differences in outcomes—these factors further complicate the interpretation. EGCG itself is reported to influence the ERK1/2, MEK, VEGF, MMP, AKT, and apoptosis pathways, as well as p53 stabilization in prostate cancer cell models. In this regard, it can be said that EGCG does indeed possess chemopreventive potential, as supported by molecular effects that provide a biological basis. Nevertheless, on the other hand, inconsistencies remain in clinical trials regarding cancer incidence or disease progression.(Ren et al., 2021; C.-H. Zhang et al., 2019; J. Zhao et al., 2021). The gap between EGCG's significant molecular activity and clinical success is likely due to a handful of logistical challenges. For example, EGCG has low bioavailability in humans, as well as a variety of metabolic rates. Another potential problem is that research is perhaps using an inadequate dosage or an inadequate length of study. With all of this in mind, we should take a close look at Figures 2-4. While these figures point to some very promising biological pathways, they are more background evidence.

In the case of lung cancer, EGCG has been found to be effective on multiple fronts. As depicted in the diagrams of Figure 3 and Figure 4, EGCG has been found to modulate key targets like p53, β-catenin, VEGF, AKT, HIF-1α, and COX-2. In addition to this, EGCG has also been found to assist.

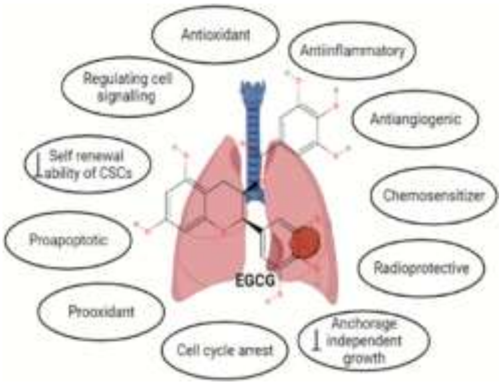

Figure 3. Chemopreventive and Therapeutic Activity of EGCG in Lung Cancer
Source: (Sehgal et al., 2023).

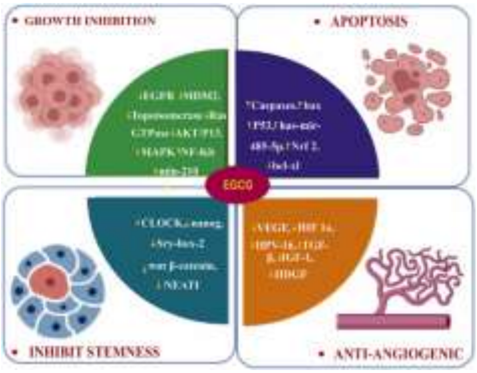

Figure 4. Effect of EGCG on Modulating the Expression of Molecules Involved in Lung Carcinogenesis
Source: (Sehgal et al., 2023).

In comparison to the case of prostate cancer, results from lung cancer clinical research established much more definitive evidence of a benefit from EGCG as it relates to helping to alleviate the discomfort caused by esophagitis as a result of radiation therapy. One advantage of this is that all patients receiving EGCG reported reductions in their pain and difficulty swallowing when given EGCG as compared to those not receiving EGCG. While patients receiving EGCG experienced many positive side effects, there is little to no evidence to support this treatment has prolonged the survival of patients when analyzing either progression-free or overall survival statistics as minimal improvement was observed in either area; furthermore, none of these are statistically significant results. Several key aspects likely contribute to the disparity in positive side effect and survival statistics, including the cancer stage at initiation of EGCG, whether EGCG is initiated preventively or when symptoms develop and variability in standard of care protocol considerations. The statistical power available is also diminished due to the small sample sizes of all study cohorts, making the reliable tracking of survival difficult. Thus, while decreasing toxicities associated with therapy are an obvious improvement to the daily quality of life for patients, it cannot yet be concluded that EGCG has a direct effect on tumor shrinkage without substantial additional evidence.

Past reviews conducted on green tea polyphenols have been bogged down by inconsistent or completely ambiguous results. In this light, the results that have been produced in this review appear more consistent than in previous reviews. The results make a convincing argument for the benefits of EGCG as an adjunct therapy for taking the sting out of unpleasant treatment side effects. The hard evidence required for this compound to be touted as the definitive cancer preventative or survival mechanism just isn't there yet. When viewed as part of the larger picture of the current literature, these results certainly bode some optimism, however cautiously.

We also have to be honest about the restrictions that have been built into this review process. We're talking about a small number of studies and patient populations that are extremely limited in size. The study designs and outcomes that have been measured differ dramatically from study to study. When you consider the inherent risks of methodology and publication bias that can always come into play, making any sort of quantitative analysis or broadening the results incredibly challenging. When you look at the bigger picture in public health, the current evidence just isn't enough to support the idea of EGCG as a chemopreventative for these types of cancers. However, I think we can safely say that its ability to reduce the negative side effects of radiotherapy isn't something that should be dismissed. Reducing the harsh effects of chemotherapy can greatly change the life of the patient. This is a huge benefit, especially for clinics that have limited resources at their disposal. The next step in determining its true value will be massive and strict randomized trials that track patient outcomes.

CONCLUSIONS

EGCG is looking fantastic in the lab, demonstrating tremendous biological activity. Translating that into humans is a whole other ballgame. The data we have on humans is just too sparse and disorganized. Let's consider prostate cancer as an example. EGCG is barely effective in reducing PSA levels and is totally inconsistent in doing so. There is just no hard data on its efficacy in stopping the progression of the disease altogether. In lung cancer studies, we do see some promise, but only for those patients who are experiencing the unpleasant side effects of radiotherapy to treat their cancer. EGCG actually works to soothe acute esophagitis. Patients report less pain and easier swallowing, all without suffering major adverse effects. It does not necessarily help them live longer. Its effect on survival, overall or progression-free, remains a huge question mark. When you consider the small sample sizes, the obvious differences in study design, and the ever-present possibility of bias, we just can't in good conscience recommend EGCG for cancer prevention or treatment at this time. The most realistic role for EGCG at this time appears to be as an adjunct therapy to take the edge off the more unpleasant cancer treatments. Until we have massive studies that utilize strict controls and measure real endpoints, that is where EGCG's potential begins and ends.

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