



Open Access Indonesian Journal of Medical Reviews

Journal Homepage: <https://hmpublisher.com/index.php/OAIJMR>

Herbal Medicines as Cancer Treatment: A Narrative Literature Review

Awan Rochaniawan^{1*}

¹Faculty of Medicine, Universitas Sriwijaya, Palembang, Indonesia

ARTICLE INFO

Keywords:

Cancer
Cannabis
Green tea
Herbal medicines
Turmeric

*Corresponding author:

Awan Rochaniawan

E-mail address:

awan.rochaniawan@gmail.com

The author has reviewed and approved the final version of the manuscript.

<https://doi.org/10.37275/oaijmr.v1i5.49>

ABSTRACT

Cancer is a devastating disease that affects millions of people around the world. Despite significant advances in cancer treatment over the years, including chemotherapy, radiation therapy, and surgery, many patients still experience significant side effects and poor outcomes. As a result, there has been growing interest in alternative and complementary therapies, including herbal medicine. Herbal medicine, also known as botanical medicine, is the use of plants and plant extracts for medicinal purposes. This practice has been used for thousands of years and is still commonly used in many cultures around the world. In recent years, there has been growing interest in the use of herbal medicine as a cancer treatment. Many herbs and plant extracts have been found to contain compounds that have anti-cancer properties. These compounds can help to kill cancer cells, prevent the growth and spread of tumors, and reduce the side effects of cancer treatment.

1. Introduction

Cancer is a complex and multifaceted disease that affects millions of people worldwide. Despite significant advances in modern medicine, including chemotherapy, radiation therapy, and surgery, many cancer patients continue to experience significant side effects and poor outcomes. As a result, there has been growing interest in alternative and complementary therapies, including herbal medicine. Herbal medicine, also known as botanical medicine, is the use of plants and plant extracts for medicinal purposes. This practice has been used for thousands of years and is still commonly used in many cultures around the world. In recent years, there has been a renewed interest in the use of herbal medicine for cancer treatment, as many herbs and plant extracts have been found to contain compounds that have anti-

cancer properties.¹⁻⁴

The potential of herbal medicine as a cancer treatment has been the subject of extensive research in recent years. Many studies have explored the anti-cancer properties of various herbs and plant extracts, as well as their potential to enhance the effectiveness of traditional cancer treatments. While more research is needed to fully understand the therapeutic potential of herbal medicine for cancer treatment, the evidence to date suggests that it may have significant benefits for cancer patients.^{5,6}

Cannabis for cancer treatment

Cannabis, also known as marijuana, is a plant that has been used for medicinal purposes for thousands of years. In recent years, there has been growing interest in the use of cannabis for cancer treatment,

as studies have suggested that certain compounds found in cannabis may have anti-cancer properties. Cannabis contains compounds known as cannabinoids, which interact with the body's endocannabinoid system. This system is involved in many physiological processes, including pain, inflammation, and immune function. Two cannabinoids, in particular, delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD), have been the subject of extensive research for their potential anti-cancer properties.^{7,8}

Studies have shown that THC can induce cancer cell death and inhibit the growth and spread of tumors in animal models. THC may also enhance the effectiveness of traditional cancer treatments, such as chemotherapy and radiation therapy, by sensitizing cancer cells to these treatments. In addition, THC has been found to have anti-inflammatory and pain-relieving properties, which may be beneficial for cancer patients who are experiencing pain or inflammation.

CBD, on the other hand, has been found to have anti-cancer properties independent of its interaction with the endocannabinoid system. Studies have shown that CBD can inhibit the growth of cancer cells and prevent the spread of tumors in animal models. CBD may also enhance the effectiveness of traditional cancer treatments by reducing the side effects of chemotherapy and radiation therapy, such as nausea and vomiting.^{9,10}

Despite the potential benefits of cannabis for cancer treatment, there are also risks associated with its use. Cannabis can have psychoactive effects, and long-term use can lead to dependence and addiction. In addition, smoking cannabis can be harmful to the lungs, and there is some evidence to suggest that it may increase the risk of lung cancer. As a result, many cancer patients who are interested in using cannabis for their treatment have turned to medical marijuana, which is legal in some states in the US and in many countries around the world. Medical marijuana is regulated and prescribed by healthcare providers, and it is typically administered in the form of oils, tinctures, or capsules rather than smoked.

Turmeric for cancer treatment

Turmeric is a spice that has been used for centuries in traditional medicine for its anti-inflammatory and antioxidant properties. Curcumin is the active compound found in turmeric that has been the focus of research for its potential anti-cancer properties. Studies have shown that curcumin can induce cancer cell death and inhibit the growth and spread of tumors in animal models. Curcumin may also enhance the effectiveness of traditional cancer treatments, such as chemotherapy and radiation therapy, by sensitizing cancer cells to these treatments.¹¹

In addition to its anti-cancer properties, curcumin has been found to have anti-inflammatory and antioxidant properties that may be beneficial for cancer patients. Inflammation plays a key role in cancer development and progression, and curcumin's ability to reduce inflammation may help to prevent cancer and improve outcomes for cancer patients. Curcumin's antioxidant properties may also help to protect healthy cells from damage caused by chemotherapy and radiation therapy. Despite the potential benefits of turmeric for cancer treatment, more research is needed to fully understand its therapeutic potential and to determine the appropriate dosages and administration methods. Some studies have suggested that curcumin may have poor bioavailability, meaning that it may not be well-absorbed by the body when taken orally. However, there are new formulations of curcumin that have been developed to improve its absorption and efficacy.^{12,13}

Green tea for cancer treatment

Green tea is a popular beverage that has been consumed for thousands of years for its numerous health benefits, including its potential anti-cancer properties. Green tea contains a class of compounds known as catechins, with epigallocatechin gallate (EGCG) being the most abundant and studied. Studies have shown that EGCG can inhibit the growth and spread of cancer cells in animal models and may also enhance the effectiveness of traditional cancer

treatments, such as chemotherapy and radiation therapy, by sensitizing cancer cells to these treatments. EGCG may also have anti-inflammatory and antioxidant properties that may be beneficial for cancer patients.

In addition to EGCG, green tea contains other compounds that have been studied for their potential anti-cancer properties, including theaflavins and thearubigins. These compounds have been found to have anti-inflammatory and antioxidant properties and may also inhibit the growth and spread of cancer cells. While the potential benefits of green tea for cancer treatment are promising, more research is needed to fully understand its therapeutic potential and to determine the appropriate dosages and administration methods. Studies have shown that the bioavailability of catechins from green tea can vary depending on the form of the tea consumed and that supplementing with green tea extract may be more effective than drinking green tea alone.¹⁴⁻¹⁶

Mistletoe for cancer treatments

Mistletoe is a semi-parasitic plant that has been used for centuries in traditional medicine for its potential anti-cancer properties. Mistletoe extracts contain various compounds, including lectins and viscotoxins, that have been the focus of research for their potential anti-cancer effects. Studies have shown that mistletoe extracts may have immune-stimulating and anti-inflammatory effects that may be beneficial for cancer patients. Mistletoe extracts have been found to enhance the activity of immune cells, such as natural killer cells, which play a key role in the body's immune response to cancer. Mistletoe extracts may also have anti-inflammatory properties that may help to reduce inflammation and pain associated with cancer.¹⁷

In addition to its immune-stimulating and anti-inflammatory properties, mistletoe extracts have been found to have direct anti-cancer effects in laboratory studies. Mistletoe extracts have been shown to induce cancer cell death and inhibit the growth and spread of tumors in animal models. Mistletoe extracts may also

enhance the effectiveness of traditional cancer treatments, such as chemotherapy and radiation therapy, by sensitizing cancer cells to these treatments. Despite the potential benefits of mistletoe extracts for cancer treatment, more research is needed to fully understand its therapeutic potential and to determine the appropriate dosages and administration methods. Mistletoe extracts can be administered in a variety of ways, including intravenous injection, subcutaneous injection, and oral preparations, and the optimal method of administration is still being investigated.¹⁸

2. Conclusion

Cannabis, turmeric, green tea, and mistletoe have been studied for their anti-cancer properties. These herbs and extracts contain compounds that have been found to have anti-inflammatory, antioxidant, and anti-cancer properties.

3. References

1. Gerber B, Müller H, Reimer T, Krause A, Friese K. Nutrition and lifestyle factors on the risk of developing breast cancer. *Breast Cancer Research and Treatment*. 2003; 79(2): 265–76.
2. Shun MC, Yu W, Gapor A. Pro-apoptotic mechanisms of action of a novel vitamin E analog (α -TEA) and a naturally occurring form of vitamin E (δ -Tocotrienol) in MDA-MB-435 human breast cancer cells. *Nutrition and Cancer*. 2004; 48(1): 95–105.
3. Wang XF, Witting PK, Salvatore BA, Neuzil J. Vitamin E analogs trigger apoptosis in HER2/erbB2-overexpressing breast cancer cells by signaling via the mitochondrial pathway. *Biochemical and Biophysical Research Communications*. 2005; 326(2): 282–9.
4. Gerber B, Scholz C, Reimer T, Briese V, Janni W. Complementary and alternative therapeutic approaches in patients with early breast cancer: a systematic review. *Breast Cancer Research and Treatment*. 2006; 95(3): 199–209.

5. Lesperance ML, Olivotto IA, Forde N. Mega-dose vitamins and minerals in the treatment of non-metastatic breast cancer: an historical cohort study. *Breast Cancer Research and Treatment*. 2002; 76(2): 137–43.
6. Saintot M, Mathieu-Daude H, Astre C, Grenier J, Simony-Lafontaine J, Gerber M. Oxidant-antioxidant status in relation to survival among breast cancer patients. *International Journal of Cancer*. 2002; 97(5): 574–9.
7. Willett WC, Stampfer MJ. What vitamins should I be taking, doctor? *The New England Journal of Medicine*. 2001; 345(25): 1819–24.
8. Ingram D, Sanders K, Kolybaba M, Lopez D. Case-control study of phyto-oestrogens and breast cancer. *The Lancet*. 1997; 350(9083): 990–4.
9. Messina MJ. Legumes and soybeans: overview of their nutritional profiles and health effects. *The American Journal of Clinical Nutrition*. 1999; 70(3, supplement): 439S–50S.
10. Yamamoto S, Sobue T, Kobayashi M. Soy, isoflavones, and breast cancer risk in Japan. *Journal of the National Cancer Institute*. 2003; 95(12): 906–13.
11. Fitzpatrick LA. Phytoestrogens—mechanism of action and effect on bone markers and bone mineral density. *Endocrinology and Metabolism Clinics of North America*. 2003; 32(1): 233–52.
12. Tice JA, Ettinger B, Ensrud K, Wallace R, Blackwell T, Cummings SR. Phytoestrogen supplements for the treatment of hot flashes: the isoflavone clover extract (ICE) study: a randomized controlled trial. *The Journal of the American Medical Association*. 2003; 290(2): 207–14.
13. Franek KJ, Zhou Z, Zhang WD, Chen WY. In vitro studies of baicalin alone or in combination with *Salvia miltiorrhiza* extract as a potential anti-cancer agent. *International Journal of Oncology*. 2005; 26(1): 217–224.
14. Jonat W, Pritchard KI, Sainsbury R, Klijn JG. Trends in endocrine therapy and chemotherapy for early breast cancer: a focus on the premenopausal patient. *Journal of Cancer Research and Clinical Oncology*. 2006; 132(5): 275–86.
15. Di GH, Li HC, Shen ZZ, Shao ZM. Analysis of anti-proliferation of curcumin on human breast cancer cells and its mechanism. *Zhonghua Yi Xue Za Zhi*. 2003; 83(20): 1764–8.
16. Wu C, Chen F, Rushing JW. Antiproliferative activities of parthenolide and golden feverfew extract against three human cancer cell lines. *Journal of Medicinal Food*. 2006; 9(1): 55–61.
17. Zhang W, Li Y, Zhang G, Lü J, Ou H. Experimental study on MCF-7 cell apoptosis induced by ursolic acid. *Zhong Yao Cai*. 2005; 28(4): 297–301.
18. Kuo PL, Hsu YL, Cho CY. Plumbagin induces G2-M arrest and autophagy by inhibiting the AKT/mammalian target of rapamycin pathway in breast cancer cells. *Molecular Cancer Therapeutics*. 2006; 5(12): 3209–21.