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A REVIEW STUDY ON THE USE OF HERBAL PLANTS FOR CANCER TREATMENTS

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ABSTRACT:

Multi-level therapy techniques are even more important because cancer is one of the leading causes of mortality globally. Its origin and simplicity of usage have made it one of the most widely used therapeutic modalities. This paper evaluates the scientific literature on the use of a few chosen herbs in cancer management, based on the bioactive components, mechanisms of action, and scientific evidence supporting their use in current research and science. In an attempt to shed some light on the debate over the definition and boundaries of herbal remedies, this study aims to show how these therapies can be used in conjunction with traditional cancer treatment.

Introduction:

Herbs have a powerful anti-cancer impact. Numerous therapeutic approaches have been developed, such as immunotherapy, chemotherapy, radiation, surgery, and targeted medication therapy. There are severe adverse effects and restrictions associated with these treatments. Herbal therapy and other complementary and alternative medicines were discovered as a result of this shift in emphasis. This review aims to gather clinical experience and literature on the most studied and used herbal plants and cancer treatment. The increased awareness of the body's holistic needs is reflected in the expanding global interest in natural and plant-based therapies, which is not passing trend. People seek for therapies that are more in harmony with the body's naturalfunctions and have fewer adverse effects.

2. Overview of Cancer Treatment Using Herbal Medicine

This area of medicine involves using items made from powerful plantsprevent or treat illnesses.
The majority of studies hypothesize that phytochemicals with cytotoxic, anti-inflammatory, and antioxidant properties found in cancer-hitting herbs maypromote tumor growth and improve a person's general health and well-being.Herbal medicine and modern oncology, which is still in the research stages, are combined in this field. On the other hand, several botanicals have shown promise in serving as primary or adjunctive treatments. Many of the compounds used in pharmaceutical drugs have been and still are sourced from plants. The Pacific yew tree's bark was the original source of paclitaxel, a wonderful chemotherapeutic miracle.

3. Key Herbal Plants And How They Prevent Cancer

3.1. Curcuma longa, or turmeric Curcumin is the active component found in turmeric.
Numerous research has examined curcumin's antioxidant and anti-inflammatory qualities. According to lab testing, curcumin appears to stop the growth of certain malignant cells, including those from the breast, colon, prostate, and pancreatic, by changing a number of catal cellular signaling pathways. Through numerous cellular regulation of molecular targets such as transcription and growth factorsand their receptors, curcumin inhibits the genesis of cancer. Curcumin's value in the fight against cancer is increased by the assumption that it regulates the action of anti-cancer medications and radiation therapy.
3.2. Camellia Sinensis, or green tea Polyphenols, particularly epigallocatechin gallate (EGCG), are abundant in green tea. The substance has been believed to limit the proliferation of malignant cells and decrease tumor mass. It is commonly consumed and has been researched for its ability to prevent gastrointestinal, skin, and lung tumors. EGCG guarantees that the MAPK and PI3K/Akt signal pathways are modulated, angiogenesis is inhibited, and apoptosis is promoted.

3.3. Panax ginseng, or ginseng Ginsenosides in ginseng have anticancer properties by inhibiting tumor cell proliferation, causing tumor cells to undergo apoptosis, and suppressing angiogenesis. Research findings are encouraging, especially for colorectal, liver, and lung malignancies. Additionally, ginseng boosts immunity and increases stamina, which helps cancer patients undergoing severe therapy. Because of its adaptogenic properties, it improves attention, revitalizes the body and mind, and lessens physical and mental tiredness.

4. Mechanisms of Action Herbal plants combat cancer through numerous mechanisms

• **Hypothetical activity:** Deactivates free radicals to try to damage and disrupt DNA so that it can become altered.
• **Impact on anti-inflammatory responses:** Reducing chronic, harmful inflammation linked to the advancement of cancer.

5. Problems and Considerations: However, the following problems plague the application of herbal therapy in the treatmentof cancer:

- **Lack of Uniformity:** The preparation, source, storage, and even procurement procedures used to obtain herbal medications result in variations in their composition and potency.
- **Limited Clinical Trials:** The evidence currently available is observational or preclinical in nature, with little to no support from large-scale randomized clinical trials. • Interactions with Drugs: By altering the effectiveness of treatment or increasing toxicity, some herbal drugs may be more detrimental than beneficial to cancer patients receiving traditional cancer therapy.
- **Misinformation and Misuse:** Patients may apply herbal medicines too soon without proper instruction, which could postpone active treatment.
- **Inducing apoptosis:** Facilitating the planned demise of dividing cellular structures to prevent subsequent copulation.
- **Anti-angiogenesis:** Stopping the growth of new blood vessels that are necessary for the nutrition of petrotropic tumefaction. Changing the immunological response: immunological system activation protects cells, particularly T cells and macrophages, which aids in the fight against tumors.

6. Conclusion

Bioactive substances with potential anticancer effects can be found in abundance in herbal plants. However, further clinical trials and standardization are required to prove the benefits of incorporating alternatives like herbal medicines into the orthodox cancer treatment regimen.
Keywords: mistletoe, green tea, ginseng, turmeric, phytochemicals, integrative oncology, cancer, alternative medicine, and plant-based therapy.

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