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HERBAL TREATMENT FOR THE OVARIAN CANCER

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ABSTRACT

Cancer is uncontrolled growth of abnormal cells in the body. At the present time, cancer is considered as a human disaster and one of the most prevalent diseases in the wide, and its mortality resulting from cancer is being increased. In the Western world, ovarian cancer is the leading cause of death from gynaecological malignancies. Despite the high complete response rate seen after maximal surgical debulking surgery and platinum-combination chemotherapy treatment of ovarian cancer remains challenging. Therapeutic herbs and their derivative phytocompounds are being progressively more accepted as useful complementary treatments for cancer. In this review, we discuss the existing treatments for ovarian cancer using herbs which play a vital role in the prevention and treatment of ovarian cancer.

Keywords: Ovarian cancer, herbs, medicinal plants.

INTRODUCTION

Abnormal growth of cells called as cancer or malignancy. There are various types of cancer, including skin cancer, breast cancer, lung cancer, prostate cancer, colon cancer, and lymphoma. Symptoms vary depending on the type.[1] Every individual carries a unique set of inherited germline mutations. As cancer progresses, additional somatic mutations and genomic rearrangements accumulate. These change scan trigger drug resistance and metastasis.[2]

Ovarian cancer is the fifth-leading cause of cancer death after cancers of the lung, breast, colon, and pancreas. Each year about 23,000 women are diagnosed with this disease and 14,000 die from it -- a relatively high fatality rate caused by the failure to catch many cases early. Obese women have a higher risk of developing ovarian cancer than their thinner counterparts.[3]

The threat of ovarian cancer increases in people who have ovulated more over their lifetime.

This includes those who have never had children, those who begin ovulation at a younger age or reach menopause at an older age.[4] Other risk factors include hormone therapy after menopause, fertility medication, and obesity.[5]

Clinical manifestation

Symptoms are frequently absent in early stages; even when they do exist, they may be subtle. In most cases, before recognized and diagnosed symptoms being exist for several months, or they may initially be misdiagnosed as a condition such as irritable bowel syndrome. Ovarian cancer, tend to be painless during early stages unless the growing mass causes ovarian torsion.

The most common symptoms include:

- Bloating
- Pelvic or abdominal pain
- Trouble eating or feeling full quickly
- Urinary symptoms such as frequency (having to go often) or urgency (always feeling like you have to go)

Others symptoms of ovarian cancer can include:

- Fatigue
- Upset stomach
- Back pain
- Pain during sex
- Constipation
- Menstrual changes
- Abdominal swelling with weight loss[6,7]

Herbs used as medicine for ovarian cancer

Garlic [*Allium sativum*] is a remarkable plant, contains multiple beneficial effects such as antithrombotic, antimicrobial, hypolipidemic, antiarthritic, hypoglycemic and antitumor activity. The growth of transplantable and chemically induced tumors in several animal models have been found retarded by using different garlic preparations including fresh garlic extract, aged garlic, garlic oil and a number of organosulfur compounds derived from garlic include Sallylcysteine. Hence, the consumption of garlic may provide some kind of protection from cancer development.[8]

Ginger [*Zingiber officinale*] may act as an anticancer and anti-inflammatory agent by inactivating NF kappa B through the suppression of the pro-inflammatory TNF-alpha.[9] Ginger root is an outstanding food for annihilating ovarian cancer cells. When ginger powder is dissolved in a solution containing ovarian cancer cultures, the mutant cells died. Ginger destroys ovarian cancer cells in two ways. First way is apoptosis (a process of cellular self-destruction) then by autophagy where the cells digest themselves. Scientists at the *University of Michigan* found that ginger caused the same rate of apoptosis as common chemotherapy drugs yet without any side effects.[10]

Green tea [*Camellia sinensis*] is an aqueous infusion of dried unfermented leaves of

Camellia sinensis (Family Theaceae) from which numerous biological activities have been reported including antimutagenic, antibacterial, hypocholesterolemic, antioxidant, antitumor and cancer preventive activities.[11] Drinking a mere two cups per day of green tea can slash the risk of ovarian cancer by half. For those who drank one cup of green tea daily, the risk of ovarian cancer was reduced by 24 percent while two or more cups lowered the risk by 46 percent. Ovarian cancer rate has been dropped by 75 percent in case of those women who consumed the beverage consistently for over 30 years. The high level of antioxidants found in green tea which are responsible for the anticancer activity.[10]

Ginkgo biloba has been shown to affect gene expression.[12] Anticancer (chemopreventive) properties are related to its antioxidant, anti- angiogenic and gene-regulatory actions. In humans, *Ginkgo biloba* extract inhibits the formation of radiation-induced clastogenic factors and ultraviolet light-induced oxidative stress.[13]

Genistein is an isoflavone that looks promising in fighting ovarian cancer.[3] Genistein has been found to inhibit cell proliferation, oncogenesis and clonogenic ability in animal and humancells.[14-16] Sulforhodamine B and colony formation assays were used to analyze growth inhibitory effects of genistein.[3]

Quercetin [*Quercus tinctoria*] It is in cancer prevention, and possibly therapeutics, wherein many future uses of this natural medicine may be directed.[17] It has been demonstrated that quercetin inhibits the growth of several cancer cell lines and that the anti-proliferative activity of this substance is mediated by a so-called Type II Estrogen-Binding Site (Type II EBS).[3] Quercetin inhibits proliferation and increases sensitivity of ovarian cancer cells to cisplatin and paclitaxel. The effects of Quercetin and cisplatin alone and in combination resulted in a synergistic anti-proliferative activity.[17]

Camptotheca [*Camptotheca acuminate*] The Camptotheca, otherwise known as the Happy Tree, is a fern-like deciduous tree with a variety of medicinal uses. CPT-11 is a compound which is extracted from the *Camptotheca acuminata* plant, is administered in patients with brain tumors through the drug Irinotecan. It is used to prevent the mutation of cells into cancerous cells with the possibility of preventing or reducing the disease into one that is benign.[20]

Mayapple [*Podophyllum peltatum*] this plant resembles a fan-like structure with wide leaves that is edible and medicinal. The Etoposide compound form which helps in killing the cancerous cells through the process of enzyme-mediated DNA scission hereby blocking the action of cell on the cancer cell DNA results in prevention and killing of cancerous cell. Some side effects of Etoposide are loss of appetite, back pain, skin discoloration, hair loss, diarrhea, and increased sweating.[20]

Pacific yew [*TaxusBrevifolia*] The Pacific Yew, otherwise known as the Western Yew, is a tree with many special uses. Its bark restrains desired properties to treat cancer effectively. The existence of this coniferous tree can be seen Southeast Alaska and also in Western part of United States. A plant of many uses; its medicinal uses are integral in cancer treatment, especially refractory ovarian cancer.[20]

Neem [*Azadirachta indica*] the neem tree is another Indian species that has long been used in traditional medicine, although as a treatment for malaria. Latest research has established that one of some active compounds in neem, gedunin, may slow or even halt the spread of certain cancers. When human ovarian cancer cell lines treated with gedunin *in vitro*, there is an 80% reduction in cell proliferation, as well as enhancing the anti-proliferation effect of cisplatin, a drug that is already widely used to treat ovarian cancer this study was published in 2009.[21]

Shatavari [*Asparagus racemosus*] the herb has been used for its multiple health benefits over centuries. Its medicinal properties had already been reported for nervous and gastric disorders. Since centuries ayurvedic physicians have used its beneficial effects for recovering female health and female sexual system. Its main sphere of action is on the female sexual system where it helps to increase the libido thereby helping improve confidence and self esteem.[22]

Lodhra [*Symplocus racemosa*] it has a big tree bark that acts as an astringent and is commonly used in leucorrhea that is the excessive discharge from the vagina. It is beneficial in case of excessive menstruation, painful menstruation and delayed menstruation. In many types of cancer, especially cancer of the female reproductive system this herb works well.[22]

Ashoka [*Saraca indica*] bark is very beneficial to treat menstrual disturbances and can regulate the female menstrual cycle. It is used in the treatment of various kinds of tumors of the female reproductive system. The pre-menstrual tension can be cured using Ashoka.[22]

Turmeric [*Curcuma longa*] one of the active ingredients in turmeric is curcumin, which has shown several indications of being a useful treatment for various conditions.[21] However new research shows that it can shrink both cancer tumours and reduce blood supply growth to tumours. It is a powerful antioxidant with liver protective benefits, and outperformed several anti-inflammatory drugs without side-effects in research.[23]

CONCLUSION

There are many conventional system of medicine in the world, each with dissimilar associated philosophies and cultural origins. Therapeutic plants have contributed a wealthy health to human beings. Plant extracts and their bioactive compounds present in them which are responsible for the treatment of ovarian cancer and they have to be screened for their valuable information. This review can assist others to look at herbs to further extent and its use in different other disease and toxicity studies along with clinical trials.

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