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MiniReview **Open Access Journal**

Anticancer Activity of Some Medicinal Plants: Minireview

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Abstract:
Cancer is a life-threatening illness that causes irreversible cell growth and is a serious public health issue worldwide. After heart disease, it is the second biggest cause of death. People choose to use natural herbs to cure cancer due to the high mortality rate caused by the disease. Since the dawn of civilization, plants have not been used to cure illnesses. Cancer prevention and treatment have greatly benefited from medicinal plants. For a long time, phytochemical research on medicinal plants has contributed to the development of novel vaccines. This article will look at some of the medicinal plants used to cure cancer, as well as vaccines used by people around the world. This study can help researchers determine the extent to which their cultures are used in clinical trials for various diseases and other toxicological investigations.

Keywords: Anticancer Activity; Cancer Drugs; Medicinal Plants; Phytochemistry; Pharmacology; Alternative Medicine; Cancer Treatment.

Introduction

Cancer is a severe disease characterized by an abnormal increase in the number of cells in our bodies that attack and kill the tissues around them (Genari et al., 2007). These cells are generated as a result of various abnormalities, and cancer can be treated by rearranging these names. Millions of dollars have been spent on cancer screening, yet it is still unclear what causes cancer in the millions

of people diagnosed each year. Cancer-related fatalities accounted for 2-3% of annual deaths globally, according to 2006information from the American Cancer Society.As a result, cancer claims the lives of approximately 3,500 million people per year throughout the world (Catherisan, 2006). Lung tumor is the most common type of tumor in men, while breast tumor is the most frequentform of tumor in women among the most common cancers (lung, stomach, colon, rectum, liver, and breast).Women's. In 2008, more than 12.7 million people were diagnosed with cancer, of which 7.6 million died from the disease. Two-fifths of all cancers diagnosed worldwide are breast tumor, lung tumor, colorectal tumor, and colon tumor. It is believed that morethan 70% of cancer deaths occur in low- and middle-income countries.Cancer deaths are expected to reach 11.5 million by 2030 (Cancer Research UK, 2011), with 27 million new malignancies and 17.5 million cancers occurring globally by 2050 (American Cancer Society, Atlanta 2007). Behavioral changes and environmental variables, such as alcohol and tobacco, inedible meals, insufficient fruits and vegetables, obesity, physical weakness, chronic Helicobacter pylori infection, and hepatitis B virus (HBV), are the cause of more than 30% of malignancies. Exposure to ionizing and non-ionizing radiation is a risk for C virus and some types of human papillomavirus (HPV). Psychosocial support, surgery, radiotherapy, and chemotherapy are all used to treat cancer (WHO 2010). Alkylating agents, antimetabolites, antitumor drugs, platinum analogs, and cancer therapists are now used in cancer chemotherapy. Due to the increased risk of cancer and the harmful or fatal side effects of chemotherapy and radiation therapy (Cragg, et al, 2005), another allopathic treatment option is to use herbal medicines to treat this form of cancer. Many therapeutic plants have been studied in clinical trials and are currently being studied using phytochemistry to learn more about their antitumor effects against various cancers.As a result, cancer patients seeking help with support and alternative medicine in hopes of better treatment are increasingly turning to seek help with support and alternative medicine (Venkateshwar et al., 2008).

Therapeuticherbs used to Treat Cancer

For thousands of years, plants have been used to treat a range of ailments. Since ancient times, landscapes have been employed for medicinal purposes in Egypt, China, India, and Greece, and many contemporary medications have been produced from them.In 2600 BC, Sumerians and Accidents (native folio) were mentioned on comprehensible crops for the purpose of remedies. Herbal medicine has been a hot topic around the world in recent years, influencing global health and worldwide trade.Advanced medicinal plants, especially in underdeveloped countries where herbal medicine has been used for a long time, play a vital role in supporting the global health system (Rajandeepet al., 2011). The exorbitant expense of Western drugs and medical products has led to the continued use of herbal remedies by a large number of individuals in underdeveloped countries (Cunningliam 1988). Cancer, the most common cell illness that causes mortality in many situations, is one of the diseases treated by plant medicine (Rajandeepet al., 2011). Cancer, the most common cell disease and leading to mortality in many situations, is one of the diseases treated by plant medicine (Rajandeepet al., 2011). Many cancer patients seek alternative treatment and/or support due to the high prevalence of cancer and the significant side effects of chemotherapy and radiotherapy (Rajandeep et al., 2011). Since the advent of urbanization, plants have not been used to cure a variety of human and animal ailments. They also preserve people's health and treat diseases like cancer without poisoning them. Herbal treatments are used in more than half of all contemporary medicine, and the majority of them have the ability to suppress cancer cells (Meyer et al., 1996). According to recent study, more than 60% of tumor patients take vitamins or herbs as a remedy (Rajandeep et al., 2011). Several plants with anticancer efficacy for various types of cancer were synthesized in this work. This review can help researchers evaluate the plant and its use in various illnesses, as well as toxicological investigations in clinical trials.

Medicinal Plants with Anticancer Activity

1. Camellia sinensis

Family: Theaceae.

Components used: Leaves.

Chemical Substances: consistof caffeine, linoleic glyceride, oleic glycerides, naringin and catechins.

Medicalutilizes: It is used for arthritis.

Pharmacological properties: anticancer, gastroprotective and immunomodulatory.

Study: Boehm et al reported that Camellia sinensis can be used to prevent cancer and Ravindranath et al. reported that pure epicatechin derived from *Camellia sinensis* inhibits the growth of male-dependent tumor cell lines (Ravindranath et al., 2006).

2. Aegle marmelos

Family: Rutanacea

Parts used: Roots, fruits, leaves and stems.

Chemical composition: Contains lignan glucosides, coumarin, marmine, umbiliferon, tannin schemianin, flubutanenciglin, ordinal and ethyl cinnamide.

Therapeutic uses: It is used in the treatment of hyperbilirubinemia and tumor.

Pharmacological properties: anti-inflammatory, laxative, diuretic, gastro-intestinal, nutritional and anticancer.

Study: Vijaya et al. reported the antiproliferative and antioxidant properties of *Aegle marmelos* (Linn.).

3. Boswellia serrata

Family: Burseraceae,

Parts used: Gum

Chemical composition: Contains glyceric acid, oleanolic acid and boswellic acid.

Medicinal uses: It is used to treat arthritis and painful joint diseases.

Pharmacological properties: anti-inflammatory, adhesive and anti-carcinogenic.

Studies: Yadav et al. reported that boswellic acid inhibited the development and metastasis of breast tumor and methylation in mice by reducing stimulation, proliferation, stimulation, and angiogenic biomarkers (Yadav et al., 2011).

4. Curcuma longa

Family: Zingiberaceae.

Used parts: rhizomes.

Chemical compounds: Contains xerombone, cineole, alpha zingiberene, alpha curcumin and germacrine.

Medicinal uses: It is used to treat arthritis.

Pharmacological properties:aromatic, anti-inflammatory and antiseptic.

Study: The anticancer activity of Curcuma longa was statedthroughKutan et al. (1985). Park et al. (2005) described the chemo preventiveoutcomes of *Curcuma longa*.

5. Alternanthera philoxeroides

Family: Amaranthaceae.

Parts used: Arial parts.

Chemical composition: Contains phytol, cyclocalinol, 24-methylcycloartanol, alpha-spinasterol, beta-sitosterol, oleoic acid, phyvitin.

Therapeutic uses: It is used in the treatment of tumor.

Pharmacological properties: antitumor, antipyretic and antioxidant.

Study: Fang et al. reported anticancer combination of Alternanthera fluxeroid (Fang et al., 2007).

*6. Solanum pseudocapsicum*L

Family: Solanaceae.

Parts used: Leaves and roots.

Chemical constituents:aldehydes, terpenoids, fatty acids, beta and delta elements, and hexadecanoic acid.

Medicinal uses: It is used for cancer.

Pharmacological properties: antitumor.

Study: Alcoholic beverages that root and root have antibacterial activity. Badami et al. reported antitumor activity of the alkaloid composition of pseudo-eggplant leaves (Badami et al., 2003).

7. Plantago major L

Family: Plantaginaceae.

Local Name: JangliIspghol.

Parts used: seeds.

Chemical composition: Contains colloidal molola, xylose, arabinose and galacturonic acid.

Medicinal uses: used for abdominal pain and constipation.

Pharmacological properties: immunomodulating, antiviral, antioxidant, anticancer.

Study: Ozaslan et al. reported the antitumor outcome of Plantago major L. extract on Balb / C mice with Ehrlich tumor ascites (Ozaslan et al., 2007).

8. Fumaria indica

Family: Fumariaceae.

Local Name: Papra.

Parts used: Leaves and flower.

Chemicalconstituents: Contains sterols, tannins, saponins, flavonoids, alkaloids and carbohydrates.

Medicinal uses: It is used for anxiety, liver disease, cancer and inflammation.

Pharmacological properties: Diuretic, sedative, antidepressant, cholagogue, laxative, diaphoretic, anthelmintic, alcoholic beverage.

Studies: Hussain et al. reported chemo preventive effects of *Fumaria indica* and N-nitrosodiethylamine and CCl4 in hepatocellular carcinoma in Wistar rats (Hussain et al., 2012).

9. Stinging nettle

Family: Urticaceae.

Parts Used: Seeds and herb.

Chemical Constituents: Contains linoleic acid, lignin, kaempferol, formic acid, choline, histamine, caffeic acid, acetophenone and agglutinin.

Medicinal uses: It is employed in low back pain as well asin osteoarthritis.

Pharmacological properties: It is anti-inflammatory, antirheumatic also immunosuppressant.

Study: Konrad et al.described antiproliferative effects on human prostate cancer cells from a strong Urtleadioic root (Konrad et al., 2000).

10. Zingiberofficinale

Family: Zingiberaceae.

Parts Used: Rhizome.

Chemical Constituents: Contains zingiberene, zingiberol and shagaol.

Medicinal uses: It is used for arthritis, cancer, migraine, gout and inflammatory bowel disease.

Pharmacological properties: It is analgesic and anti-inflammatory.

Study: Haniadka et al. reported the effectiveness of *Zingiberofficinale* as an anti-inflammatory and anti-inflammatory drug (Haniadka et al., 2012).

11. Cynodondactylon

Family: Poaceae.

Parts used: Leaves and stem.

Medicinal uses: It is used on skin rashes, boils, stools, diarrhea, diarrhea and blood clots.

Pharmacological properties: it is astringent and antiseptic.

Study: Albert et al reported the chemo preventive effects of Cynodondactylon (L.) Eq. Removal of DMH-induced colon carcinogenesis in experimental animals (Albert et al., 2010).

11. Cynodondactylon

***12. Juglans regia* L**

Family: Juglandiaceae.

Local Name: Akhor,Akhori.

Parts Used: Bark.

Medicinal uses: It is used in tumors, heart disease as well as inflammation.

Pharmacological properties: it is anthelmintic.

Study: Kaur et al. reported antimutagenic and antiproliferative properties of *Juglans regia* L (Kaur et al., 2003).

13. Mallotusphilippensis

Family: Euporbiaceae.

Local Name: Kamila.

Parts Used: Stem bark.

Medicinal uses: It is used on intestinal worms.

Pharmacological properties: it is anatomical, cathartic as well as bare.

Study: Tanaka et al reported that the tumor blocker 3alpha-hydroxy-D: A-riedooleanan-2-one

can be promoted by *Mallotusphilippensis* plant extract (Tanaka et al., 2008).

***14. Bryophyllumpinnatum* Lam**

Family: Crassulaceae.

Parts Used: Leaves.

Chemical Constituents: Contains quercetin, diarabinoside, kaempferol, glucoside, ferulic, coumaric and fatty acids.

Medicinal uses: Used for ulcers, boils, edema and arthritis.

Pharmacological properties: it is antineoplastic and antibacterial.

Studies: Mahata et al. reported anticancer agents in *Bryophyllumpinnata* (Lam.) Oken. are removed from human cancer cells. This study highlights its use as a herbal remedy for cancer (Mahata et al., 2012).

15. Catharanthus roseus

Family: Aponaceae.

Parts Used: Thewhole plant.

Chemical constituents: Contains coronaridine, methoxyabersonine, tetrahydroalstinin, ajmalicin, vindorosine, cataranthine, mitrafylline, vindoline, vincristine, vinblastine, urosolic acid, leurosine, iso leurosine and previna.

Medication uses: It is prescribed to treat cancer.

Pharmacological properties: It is hypoglycemic and anti-cancer.

Study: Asano et al. reported the antitumor alkaloid indole dimeric alkaloid in *Catharanthus roseus* (Asano et al., 2010).

16. Clerodendruminerme

Family: Verbenaceae.

Parts used: Leaves and roots.

Chemical Constituents: Contains resins, gums, sterols and triterpenoids.

Medications: It is used for cancer, inflammatory and bacterial infections.

Pharmacological properties: it is tonic, febrifuge, mucilaginous, scent, analgesic and antimicrobial.

Study: Manoharan et al. reported anti-carcinogenic effects of *Clerodendruminerme* and large carcinogenesis in hamsters caused by 7, 12-dimethylbenz (a). This study supports its use as a laxative (Manoharan et al., 2006).

17. Rutagraveolens

Family: Rutaceae,

Parts used: Aerial parts.

Chemical Constituents: Contains rutin glucosides and essential oils.

Medication: It is used for anxiety, depression, dizziness and respiratory illnesses.

Medication: anti-inflammatory.

Study: Preethi et al. reported the anticancer effects of *Rutagraveolens* extract (Preethi et al., 2006).

***18. Papaver somniferum* Linn**

Family: Papaveraceae,

Parts Used: Seeds and flowers.

Chemical Constituents: Contains phenylalanine, tyrosine, narcotine, narcein, papaverine, morphine, codeine, tetrahydroisoquinoline alkaloids, noscapine, sanguinarine, thiamine, riboflavin, folic acid, niacin, tocopherol, palmitic acid, stearic acid, acetic acid and linolene.

Medication: It is used for insomnia and pain.

Pharmacological properties: It is hypnotic, sedative, analgesic, astringent, aphrodisiac, tonic and hypoglycemic.

Research: Aruna et al. reported anticarcinogenic effects of this plant (Aruna et al., 1992).

19. Trillium pendulum

Family: Liliaceae.

Parts Used: Rhizome.

Medicinal uses: It is used in cough, bronchial problems, bleeding, menopause, breast milk, diarrhea and blood clots.

Pharmacological properties: it is anticancer.

Study: Mazzio et al. (2010) reported *in vitro* antitumor activity (Mazzio et al., 2010).

20. Hydrastis canadensis

Family: Ranunculaceae.

Parts Used: Rhizome.

Medicinal uses: It is used in inflammation, eczema, ringworm, erythema, urinary tract infections, tonsillitis and other throat problems.

Pharmacological properties: it is antiseptic, antitumor and antibacterial.

Studies: Karmakar et al. reported antitumor activity of this plant (Karmakar et al., 2010).

21. Humulus lupulus

Family: Cannabaceae.

Parts Used: Flowers.

Medicinal uses: It is used for mental disorders, insomnia, intestinal problems, boils, ulcers, swelling and painful dermatitis.

Pharmacological properties: it is a diuretic.

Study: Ho et al. reported the antitumor action of this plant (Ho et al., 2008).

22. Eriodictyoncalifornicum

Family: Boraginaceae.

Parts Used: Leaves.

Medicinal uses: It is used in bronchial congestion, dysentery, loose motion, asthma and hay fever.

Pharmacological action: It is digestive and used in asthma.

Study: Liu et al.stated the anti-cancer action of this plant (Lim et al., 1992).

***23. Asclepiascurassavica* Linn**.

Family: Asclepiadaceae.

Parts Used: Leaves.

Local Name: Kakatundi.

Medicinal uses: It is utilized in worms, hemorrhoid, leucorrhoea, constipation, boils and swellings.

Pharmacological Activity: It is anticancer and laxative.

Study: Anticancer activity of this plant in experimental colon cancer model has been reported (Baskar et al., 2010).

24. Solanum indicum

Family: Solanaceae.

Local Name: Badi Kateri.

Parts Used: Root, fruit, and seed.

Medicinal uses: It is used in sexual ailments.

Pharmacological Activity: It is a stimulant as well as analgesic.

Study: Antitumor agents from *Solanum indicum* have been isolated (Chiang et al., 1991).

25. Ichnocarpusfrutescens

Family: Apocynaceae.

Local name: Kali-Dudhi.

Parts used: Root.

Medicinal uses: It is used in leucorrhea, menorrhea, urinary tract infections and skin complexion.

Pharmacological activity: It is an antacid.

Study: Antitumor action of polyphenolic extract of *Ichnocarpusfrutescens* has been reported (Kumarappan et al., 2007).

26. Aloe vera

Family: Xanthorrhoeaceae.

Parts Used: Leaves.

Medicinal uses: It is utilized in wounds, skin ailments.

Pharmacological action: It is antiseptic.

Study: Anti-tumor action of *Aloe vera*in opposition to DMBA/croton oil-induced skin papillomagenesis in Swiss albino mice has been reported (Saini et al., 2010).

27. Enhydra fluctuans

Family: Asteraceae.

Parts used: Aerial parts.

Local name: Komprektujombi.

Medicinal uses: It is utilized in swelling, bacterial contaminations, tumoras well as degenerative disorders.

Pharmacological action: It is analgesic, anticancer, antibacterial and anti-oxidant.

Study: *Enhydra fluctuans*demonstrateantitumoractionin opposition to Ehrlich's ascites carcinoma (Sannigrahi et al., 2010).

***28. Ageratum conyzoides* L.**

Family: Asteraceae.

Parts Used: Leaves.

Chemical ingredients: It consistprecocene I and II, beta caryophyllene and germacrene.

Medicinal uses: It is utilized in high blood sugar level, peptic ulcer, also cancer.

Pharmacological action: It is antidiabetic, antiprotozoal, and anticancer.

Study: Anticancer activity of **Ageratum conyzoides** has been reported (Adebayo et al., 2010).

***29. Cassia fistula* L.**

Family: Fabaceae.

Parts used: Bark, leaves as well as fruit.

Chemical components: It contains sugar, tartaric acid, oxalic acid and cathartic acid.

Therapeutic uses: It is utilized in peptic ulcers, microbial infections, liver disorders and cancer.

Pharmacological Aactivity: It is a laxative.

Study: Antitumor action of methanolic extract of *Cassia fistula* has been accounted (Gupta et al., 2000).

***30. Bryonia alba* L.**

Family: Cucurbitaceae.

Parts used: Root.

Medicinal uses: It is utilized in dropsy, chronic rheumatism, pneumonia as well as dysentery.

Pharmacological activity: It is resolving.

Study: Antitumor substances from *Bryonia alba* have been reported (Konopa 1966).

Other medicinal plants with promising anticancer activity were summarized in Table 1.

Table 1. List of therapeutic plants having anti-cancer activity

Plant	Parts	Function	References
Rheum rhabarbarum	Roots	Anticancer, laxative and Antidiabetic	(Huang et al., 2006).
Viola odorata	Leaves	Anticancer, antidyslipidemic and hypotensive	(Perwaiz et al., 1998).
Solanum nigrum	Fruit	Anticancer, anti-inflammatory and hepatoprotective	(Li J et al., 2008)
Capsicum annuum	Fruit	Anticancer and antioxidant	(Maoka et al., 2001)
Chelidoniummajus	Aerial parts	Anticancer, antibacterial, antifungal and anti-oxidant	(Biswas et al., 2008)
Boerhaaviadiffusa Linn	Leaves	Anticancer, antifungal, anti-diabeticandimmunomodulant	(Manu et al., 2005)
Aloe arborescens	Leaves	Anticancer, wound healer, antibacterial and anti-diabetic	(Furukawa et al.,2002)
Copaiferamultijuga	Resin	Anticancer and anti-inflammatory	(Lima et al., 2003)
Maytenusilicifolia	Leaves	Anticancer, antibacterial and anti-protozoal	(Costa et al., 2008)
Acanthospermumhispidum DC	Flowers and leaves	Anticancer and anti-parasitic	(Deepa et al., 2007)
Anacardiumoccidentale L	Fruit	Anticancer, anthelmintic and hypoglycemic	(Mothé et al., 2008)
Bauhinia variegate	Stem bark	Anticancer, antihyperlipidemic,	(Rajkapoor et al., 2006)

		antioxidant and antidiabetic	
Moringa oleifera, Lam	Bark	Anticancer and antipyretic	(Bharali et al., 2003)
Angelica archangelica	Roots	Anticancer, antiseizure and hepatoprotective	(Sigurdsson et al., 2005)
Nigella sativa	Seeds	Anticancer, antihypertensive, anti-inflammatory and antiproliferative	(Worthen et al., 1998)
Withaniasomnifera	Roots	Anticancer, anti-inflammatory, anti-arthritis and anti-gout	(Devi et al.1992; Christina et al., 2004)
Moringa oleifera Lam	Bark	Anticancer, antioxidant and antidiabetic	(Guevaraa et al., 1999)
Leonotisnepetaefolia	Leaves	Anticancer, antipyretic, antimalarial and antimicrobial	(Gurunagarajan et al., 2010)
Curcuma longa	Rhizome	Anticancer, hypolipidemic, anti-oxidant, anti-inflammatory and radioprotective	(Mahady et al., 2002)
Asteracanthalongifolia	Seeds	Anticancer, hepatoprotective, aphrodisiac, antidiabetic, diuretic and antiarthritis	(Ahmed et al., 2001)
Calotropis procera	Leaves	Anticancer, anti-convulsant and anti-nociceptive	(Choedon et al., 2006)
Calendula officinalis	Stems leaves	Anticancer, anti-inflammatory, hepatoprotective, antigenotoxic, antiviral, astringent, renoprotective and wound healer	(Boucard et al., 1988)
Lawsoniainermis	Bark	Anticancer, antimicrobial, antifungal and wound healer	(Endrini et al., 2007)
Daucus carota	Roots flowers	Anticancer and antihypertensive	(Jing et al., 2008)
Pinus koraiensis	Seeds	Anticancer and anti-hyperlipidemic	(LiK et al., 2007)
Ananascomosus	Fruit	Anticancer, abortifacient and hypolipidemic	(Taussig et al., 1985)
Khaya senegalensis	Stem bark	Anticancer, anti-inflammatory and anthelmintic	(Zhang et al., 2007)
Acacia nilotica	Pods, bark	Anticancer, antispasmodic, antihypertensive, gastroprotective and antidiarrheal	(Sakthivel et al., 2012)

Conclusion

Medicinal plants are used to promote good health and well-being, as well as to treat various illnesses, such as cancer and smallpox. These plants possesse anti-cancer, immunomodulatory, and antioxidant properties. Herbalists have played an increasingly important role in cancer treatmentin recent years. The effectiveness of chemotherapy on medicinal plants is demonstrated

in this study. It is essential to evaluate the anti-carcinogenic efficacy of medicinal plants in order to expend their use in the treatment of various Further and to improve their hazardous profile. More studies, especially *in vivo* trials, are needed to establish the efficacy of plants and its potential for use in the cancer treatment.

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