

THERAPEUTIC POTENTIAL OF AYURVEDIC HERBAL DRUGS FOR ARBUDA (CANCER): AN INTEGRATIVE CONCEPTUAL ANALYSIS

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ABSTRACT

Introduction: Cancer is a multifactorial disease characterized by uncontrolled cellular proliferation, tissue invasion, and metastasis, contributing significantly to global morbidity and mortality. Despite advances in conventional therapies, challenges such as adverse effects, drug resistance, and recurrence necessitate the exploration of complementary therapeutic approaches. *Ayurveda*, the traditional Indian system of medicine, describes conditions analogous to cancer under the concept of *Arbuda* and advocates the use of medicinal plants for disease management. **Materials and Methods:** A comprehensive literature review was conducted using classical *Ayurvedic* texts, peer-reviewed research articles, and scientific databases to explore the *Ayurvedic* understanding of *Arbuda* and the therapeutic potential of *Ayurvedic* medicinal plants in cancer management. **Discussion:** *Ayurvedic* medicinal plants

possess diverse bioactive constituents that exhibit antioxidant, anti-inflammatory, antiproliferative, and immunomodulatory properties. These phytochemicals may influence multiple molecular targets involved in carcinogenesis by reducing oxidative stress, modulating inflammatory pathways, inducing apoptosis, improving mitochondrial function, inhibiting abnormal cellular signalling, suppressing tumour cell invasion, and preventing genetic mutations. Such multifaceted actions highlight their potential role as supportive agents in cancer prevention and management. **Conclusion:** Emerging evidence suggests that *Ayurvedic* medicinal plants may offer promising therapeutic benefits in cancer management

through the modulation of key cellular and molecular pathways associated with tumour development and progression. Further experimental and clinical investigations are warranted to validate their efficacy, elucidate their mechanisms of action, and facilitate their integration into evidence-based oncology.

KEYWORDS: *Arbuda*; *Ayurveda*; *Dravyaguna*; Medicinal Plants; Cancer Management; Phytochemicals; Antioxidant Activity; Apoptosis; Herbal Medicine; Integrative Medicine.

INTRODUCTION

Cancer remains one of the most significant global health challenges and a leading cause of morbidity and mortality worldwide. According to the World Health Organization (WHO), approximately 20 million new cancer cases and 9.7 million cancer-related deaths were reported globally in 2022.^[1] More than 53.5 million individuals were living within five years of a cancer diagnosis, highlighting the substantial burden imposed by the disease. Current projections indicate that the annual incidence of cancer may exceed 35 million cases by 2050, representing a 77% increase compared with 2022 estimates. This rising trend is largely attributed to population growth, ageing, urbanization, and increased exposure to modifiable risk factors such as tobacco use, alcohol consumption, obesity, unhealthy dietary habits, physical inactivity, and environmental pollutants.

Cancer is characterized by the uncontrolled proliferation of abnormal cells resulting from genetic and epigenetic alterations that disrupt normal cellular regulatory mechanisms. These transformed cells possess the capacity to invade adjacent tissues and metastasize to distant organs, making cancer a complex and multifactorial disease. Despite remarkable advancements in surgery, chemotherapy, radiotherapy, targeted therapy, and immunotherapy, treatment-associated toxicity, drug resistance, recurrence, and compromised quality of life remain major challenges.

In this context, *Ayurveda* offers a holistic perspective on cancer management. The condition analogous to cancer is described under *Arbuda* in classical Ayurvedic literature. Numerous Ayurvedic medicinal plants possess antioxidant, anti-inflammatory, immunomodulatory, antiproliferative, and pro-apoptotic properties, suggesting their potential role as complementary therapeutic agents in integrative oncology. Exploring these herbal interventions may provide valuable insights for the development of safer and more effective strategies for cancer prevention and management.

AIM

To critically explore the therapeutic potential of Ayurvedic medicinal plants in the management of *Arbuda* (Cancer) by integrating classical Ayurvedic concepts with contemporary scientific evidence.

OBJECTIVES

1. To review the Ayurvedic understanding of *Arbuda* and its correlation with the modern concept of cancer.
2. To examine the pharmacological and therapeutic properties of selected Ayurvedic medicinal plants with documented anticancer potential.
3. To evaluate the available scientific evidence regarding the mechanisms of action of Ayurvedic herbs in cancer prevention and management.
4. To explore the role of Ayurvedic herbal interventions as complementary approaches in integrative oncology.
5. To highlight future research directions for the scientific validation and clinical application of Ayurvedic medicinal plants in cancer care.

REVIEW OF LITERATURE

Ayurvedic Approach to Cancer Management

Ayurveda, the traditional system of Indian medicine, has long emphasised the use of medicinal plants for the promotion of health, prevention of disease, and management of chronic disorders. Rooted in a holistic understanding of the human body, *Ayurveda* considers health to be a state of equilibrium among the *Doshas*, *Dhatus*, *Agni*, and *Srotas*. Conditions analogous to cancer are described under the broad concept of *Arbuda*, which is believed to arise from the persistent vitiation of *Doshas*, impairment of tissue metabolism, and disruption of normal cellular homeostasis.

India possesses a vast repository of medicinal plant diversity, many of which have been traditionally employed in the management of *Arbuda* and related disorders. In recent decades, scientific investigations have increasingly focused on validating the therapeutic potential of these plants through pharmacological and molecular studies. Several Ayurvedic medicinal plants, including *Withania somnifera* (*Ashwagandha*), *Curcuma longa* (*Haridra*), *Tinospora cordifolia* (*Guduchi*), *Semecarpus anacardium* (*Bhallataka*), and *Plumbago zeylanica* (*Chitraka*), have demonstrated significant anticancer properties in experimental and preclinical studies.

The bioactive constituents present in these plants exhibit diverse mechanisms of action, including antioxidant, anti-inflammatory, immunomodulatory, antiproliferative, antiangiogenic, and pro-apoptotic effects. These phytochemicals may modulate multiple molecular pathways involved in carcinogenesis, tumour progression, and metastasis. Consequently, Ayurvedic medicinal plants have emerged as promising candidates for complementary and integrative cancer management, warranting further clinical investigation to establish their efficacy, safety, and therapeutic applicability in modern oncology.

***Curcuma longa* (Haridra)^[2]**

Curcuma longa L. (Haridra), commonly known as turmeric, is one of the most extensively studied medicinal plants for its anticancer potential. Curcumin, the principal bioactive polyphenolic constituent of turmeric, has demonstrated significant anticancer activity in both in vitro and in vivo studies. Experimental investigations have shown that curcumin exhibits cytotoxic effects against a wide range of cancer cell lines by modulating multiple molecular pathways involved in cell proliferation, apoptosis, angiogenesis, and metastasis. Furthermore, animal studies have reported its ability to inhibit tumour growth and progression while exhibiting a favourable safety profile. In a pioneering study, Kuttan et al. (1985) demonstrated the anticancer efficacy of curcumin in experimental models, highlighting its potential as a therapeutic agent in cancer management. The antioxidant, anti-inflammatory, and pro-apoptotic properties of curcumin further support its role as a promising complementary intervention in integrative oncology.

***Catharanthus roseus* (Sadabahar)**

Catharanthus roseus (L.) G. Don (formerly *Vinca rosea*) is an important medicinal plant and a rich source of the vinca alkaloids, vincristine and vinblastine. These plant-derived anticancer agents inhibit microtubule formation, arrest mitosis, and induce apoptosis in rapidly proliferating cancer cells. Due to their potent cytotoxic activity, they are widely used in the treatment of Hodgkin's lymphoma, leukaemia, breast, testicular, and lung cancers. The discovery of these alkaloids represents a major milestone in natural product-based cancer therapy and underscores the potential of medicinal plants in anticancer drug development (Cragg and Newman, 2005; Mann, 2002).^[3]

Vinca alkaloids exert their anticancer effects by binding to tubulin and inhibiting microtubule polymerization, thereby disrupting mitotic spindle formation. This results in metaphase arrest, impaired chromosome segregation, and apoptosis of rapidly dividing cancer cells.

Consequently, vincristine and vinblastine are effective against a wide range of haematological and solid malignancies (Moudi et al., 2013).^[4]

Abrus precatorius (Gunja)^[5]

Abrus precatorius L. (Gunja) is an important medicinal plant in Ayurveda that has attracted scientific interest due to its potential anticancer properties. Experimental studies have demonstrated that extracts of *A. precatorius* possess cytotoxic and antiproliferative activities against various cancer cell lines. In an in vitro investigation, the ethyl acetate (ETA) extract of *A. precatorius* exhibited significant anticancer activity against P815 tumour cells, suggesting its potential to inhibit tumour cell growth and viability (Lebri et al., 2015). The observed effects may be attributed to the presence of bioactive phytoconstituents capable of inducing apoptosis, suppressing cellular proliferation, and modulating signalling pathways involved in carcinogenesis. These findings support the traditional therapeutic significance of *Gunja* and warrant further preclinical and clinical studies to elucidate its mechanisms of action and evaluate its potential role in integrative cancer management.

Tinospora cordifolia (Guduchi)^[6]

Tinospora cordifolia (Willd.) Hook. f. & Thomson, commonly known as *Guduchi*, is a renowned Ayurvedic medicinal plant recognized for its immunomodulatory, antioxidant, and therapeutic properties. Recent studies have highlighted its potential anticancer activity. The methanolic extract of *T. cordifolia* has demonstrated significant cytotoxic effects against human breast cancer cells while exerting comparatively minimal toxicity on normal cells. In an in vitro study, the cytotoxic activity of *T. cordifolia* was evaluated against the human breast cancer cell line MDA-MB-231 using the MTT assay, revealing a dose-dependent inhibition of cancer cell proliferation (Ahmed et al., 2015). The selective cytotoxicity exhibited by the extract suggests its potential as a promising candidate for cancer therapy. These effects are believed to be mediated through the modulation of oxidative stress, induction of apoptosis, and regulation of cellular signalling pathways involved in tumour growth and survival. Such findings support the traditional Ayurvedic use of *Guduchi* and underscore its potential role in integrative approaches to cancer management.

Semecarpus anacardium (Bhallataka)^[7]

Semecarpus anacardium (*Bhallataka*), an important medicinal plant described in Ayurvedic literature, has been extensively investigated for its chemoprotective and anticancer potential. Various extracts of *S. anacardium*, including aqueous, alcoholic, and oil extracts, have

demonstrated significant antimutagenic activity in human lymphocytes, suggesting their ability to protect genetic material from mutagen-induced damage (Kothari et al., 1997). The antimutagenic effects of *Bhallataka* are of particular relevance in cancer prevention, as genetic mutations play a crucial role in the initiation and progression of malignancies. In addition to its antimutagenic properties, subsequent studies have reported antioxidant, immunomodulatory, antiproliferative, and apoptosis-inducing activities of *S. anacardium*, further supporting its potential role in integrative cancer management. The diverse bioactive compounds present in the plant may contribute to the modulation of multiple molecular pathways involved in carcinogenesis, making *Bhallataka* a promising candidate for future anticancer research.

***Plumbago zeylanica* (Chitraka)^[8]**

Plumbago zeylanica L. (Chitraka) is a well-known Ayurvedic medicinal plant recognized for its diverse therapeutic properties and emerging anticancer potential. Experimental studies have demonstrated that the ethanolic extract of *P. zeylanica* exhibits significant antitumour activity in animal models. In a study conducted on male Swiss albino mice, treatment with the ethanolic extract resulted in a notable reduction in tumour volume, packed cell volume, and viable tumour cell count, indicating its potential to suppress tumour growth and progression (Hiradeve et al., 2010). The anticancer effects of *P. zeylanica* are primarily attributed to its bioactive constituents, particularly plumbagin, a naturally occurring naphthoquinone known for its antiproliferative, pro-apoptotic, antioxidant, and antiangiogenic properties. These compounds may interfere with multiple molecular pathways involved in carcinogenesis, thereby inhibiting tumour development and metastasis. The available evidence suggests that *Chitraka* holds promise as a complementary therapeutic agent in cancer management and warrants further mechanistic and clinical investigations.

***Bauhinia variegata* (Kanchanara)^[9]**

Bauhinia variegata L. (Kanchanara) is an important medicinal plant in Ayurveda, traditionally utilized for the management of glandular swellings, tumours, and various inflammatory conditions. Recent scientific investigations have highlighted its potential anticancer properties. In an experimental study, hydro-methanolic extracts of the leaves, stem bark, and flowers of *B. variegata* were evaluated for their antitumour activity against the melanoma cell line (B16F10) in C57BL mice. The extracts demonstrated significant

inhibition of tumour cell viability, indicating promising antiproliferative and cytotoxic effects (Pandey et al., 2017).

The anticancer activity of *B. variegata* is attributed to its rich phytochemical profile, including flavonoids, phenolic compounds, tannins, and glycosides, which possess antioxidant and anti-inflammatory properties. These bioactive constituents may contribute to the suppression of tumour growth through the modulation of cellular signalling pathways, induction of apoptosis, and inhibition of oxidative stress-mediated cellular damage. The available evidence supports the potential role of *Kanchanara* as a complementary therapeutic agent in cancer management, although further preclinical and clinical studies are necessary to establish its efficacy and safety in oncology.

***Allium sativum* L. (Rasona)^[10]**

Allium sativum L. (Rasona), commonly known as garlic, is widely recognized for its medicinal and therapeutic properties in both traditional and modern systems of medicine. Numerous studies have demonstrated its chemo preventive and anticancer potential against various malignancies. Experimental evidence suggests that the ethanolic extract of *A. sativum* exhibits significant inhibitory effects on carcinogenesis, particularly in liver cancer models. In a study conducted on albino rats, the ethanolic extract antagonized the proliferative processes associated with hepatic carcinogenesis, indicating its potential role in suppressing tumour development and progression (Ogar et al., 2022).

The anticancer activity of garlic is primarily attributed to its organosulfur compounds, including allicin, diallyl sulphide, diallyl disulphide, and S-allyl cysteine. These bioactive constituents have been reported to exert antioxidant, anti-inflammatory, antiproliferative, and pro-apoptotic effects. Furthermore, they may inhibit tumour cell growth through modulation of cell cycle regulation, induction of programmed cell death, suppression of angiogenesis, and reduction of oxidative stress. The growing body of evidence supports the potential application of *A. sativum* as a complementary therapeutic agent in integrative oncology, warranting further clinical investigations to validate its efficacy and safety in cancer management.

***Ocimum tenuiflorum* (Tulasi)^[11]**

Ocimum tenuiflorum L. (syn. *Ocimum sanctum*), commonly known as Tulasi or Holy Basil, is one of the most revered medicinal plants in Ayurveda and is widely recognized for its

antioxidant, anti-inflammatory, immunomodulatory, and anticancer properties. Recent studies have highlighted its potential role in cancer prevention and therapy. In an *in vitro* investigation, aqueous and dry extracts of *O. tenuiflorum* demonstrated significant cytotoxic activity against the oral squamous carcinoma cell line (Ca9-22), indicating its ability to inhibit cancer cell viability and proliferation (Luke *et al.*, 2021).

The anticancer effects of *Tulasi* are attributed to its diverse bioactive constituents, including eugenol, ursolic acid, rosmarinic acid, apigenin, and various flavonoids. These phytochemicals have been reported to exert antiproliferative, pro-apoptotic, antioxidant, and anti-inflammatory effects through the modulation of multiple molecular pathways involved in carcinogenesis. Furthermore, *Tulasi* may contribute to the prevention of DNA damage, suppression of tumour growth, and enhancement of the body's immune response against malignant cells. The available evidence suggests that *O. tenuiflorum* possesses considerable potential as an anticarcinogenic and complementary chemotherapeutic agent, warranting further experimental and clinical studies to establish its efficacy and therapeutic applicability in integrative cancer care.

Modern Perspective of Cancer

Cancer is a group of diseases characterised by the uncontrolled growth and proliferation of abnormal cells. These cells can invade surrounding tissues and spread to distant organs through metastasis. Cancer develops due to genetic and epigenetic alterations caused by hereditary factors, DNA damage, errors in cell division, chronic inflammation, and environmental exposures.

Unlike normal cells, cancer cells evade apoptosis, exhibit sustained proliferation, alter cellular metabolism, and possess the ability to invade and metastasise. These characteristics contribute to tumour progression and treatment challenges.

Cancer remains a leading cause of morbidity and mortality worldwide, with lung, breast, colorectal, prostate, liver, and cervical cancers being among the most prevalent types. Despite significant advances in diagnosis and treatment, the rising global cancer burden highlights the need for effective preventive and complementary therapeutic approaches.

Conventional Treatment Modalities for Cancer

The management of cancer involves a multidisciplinary approach comprising surgery, chemotherapy, radiation therapy, immunotherapy, hormone therapy, targeted therapy, stem

cell transplantation, hyperthermia, and photodynamic therapy. Surgery is employed for the removal of localized tumours, while chemotherapy and radiotherapy aim to destroy rapidly dividing cancer cells. Hormone therapy is effective against hormone-dependent malignancies such as breast and prostate cancers. Immunotherapy enhances the body's immune response against tumour cells, whereas targeted therapy selectively inhibits specific molecular pathways involved in cancer progression. Stem cell transplantation is utilized to restore hematopoietic function following intensive treatment. Emerging modalities such as hyperthermia and photodynamic therapy further contribute to cancer management by selectively damaging malignant cells while minimizing injury to normal tissues.

Ayurvedic Perspective on Cancer^[12]

गात्रप्रदेशे क्वचित् दोषाः सम्मुच्छिता मांसमभिप्रदूष्य ॥
 वृत्तं स्थिरं मन्दरुजं महान्तमनल्पमूलं चिरवृद्धयपाकम् ॥
 कुर्वन्ति मांसोपचयं तु शोफं तदर्बुदं शास्त्रविदो वदन्ति ॥
 वातेन पित्तेन कफेन चापि रक्तेन मांसेन च मेदसा च ॥
 तज्जायते तस्य च लक्षणानि ग्रन्थे समानानि सदा भवन्ति ॥

Ayurvedic Perspective of Cancer (*Arbuda*)

In *Ayurveda*, cancer is not described as a distinct disease entity but is understood through conditions such as *Arbuda* and *Granthi*, which resemble benign and malignant neoplasms. According to classical texts, *Arbuda* is characterized by a large, deep-seated, slowly growing, firm, and non-suppurative swelling resulting from the vitiation of *Vata*, *Pitta*, *Kapha*, *Rakta*, *Mamsa*, and *Meda*. The pathogenesis involves persistent *Dosha* imbalance, impaired tissue metabolism, and weakened *Dhatu*s, leading to abnormal tissue proliferation.

Ayurvedic literature classifies neoplastic conditions based on *Tridosha* involvement and clinical presentation. Conditions such as *Mamsarbuda*, *Raktarbuda*, and *Mukharbuda* have been correlated with melanoma, leukaemia, and oral cancer, respectively. Sushruta emphasized that improper diet, unhealthy lifestyle practices, environmental factors, and impaired tissue homeostasis contribute to tumour formation by disrupting the normal balance of *Doshas* and *Dhatu*s.

The Ayurvedic approach to cancer management focuses on prevention, restoration of systemic balance, enhancement of host immunity (*Vyadhikshamatva*), and rejuvenation through *Rasayana* therapy. Numerous medicinal plants described in Ayurveda possess antioxidant, anti-inflammatory, immunomodulatory, and antitumour properties. Modern scientific investigations have validated the anticancer potential of several Ayurvedic herbs, supporting their role as promising complementary agents in integrative oncology.

Samprapti of Arbuda (Cancer)

According to Ayurveda, *Arbuda* develops due to the persistent vitiation of the *Tridoshas* (*Vata*, *Pitta*, and *Kapha*) along with the involvement of *Rakta*, *Mamsa*, and *Meda Dhatus*. *Vata* facilitates abnormal cellular proliferation and dissemination, *Pitta* promotes metabolic and inflammatory changes that support tumour growth, while *Kapha* contributes to excessive tissue accumulation and the formation of a firm, localized mass. The interaction of these vitiated *Doshas* with susceptible *Dhatus* leads to the development of *Arbuda*.

Classical texts classify *Arbuda* based on the predominance of *Doshas* (*Vataja*, *Pittaja*, *Kaphaja*, and *Tridoshaja*) and the affected *Dhatus* (*Raktarbuda*, *Mamsarbuda*, and *Medarbuda*). Factors such as improper diet, unhealthy lifestyle practices, chronic irritation, trauma, and impaired tissue metabolism are considered important contributors to its pathogenesis.

A characteristic feature of *Arbuda* is the formation of a deep-seated, slowly growing, firm, and generally non-suppurative mass, attributed to the predominance of *Kapha* and *Meda*. The Ayurvedic approach to managing *Arbuda* emphasizes restoring *Dosha* balance, strengthening *Dhatus*, enhancing *Vyadhikshamatva* (immunity), and utilizing medicinal plants with potential antitumour properties. Several Ayurvedic herbs have demonstrated promising anticancer activities in modern scientific studies, supporting their role in integrative cancer care.

Sr. No.	Herb Name	Mode of Actions on Cancer Cells	Type of Cancer
1.	<i>Abrus precatorius</i>	Antitumor, cytotoxic, induce apoptosis, suppression of cell growth	Fibrosarcoma, lymphoblastic leukaemia, breast, hepatoma, stomach, Kaposi sarcoma
2.	<i>Semecarpus anacardium</i>	Reduce viability and increase apoptosis, control chromosomes, antitumor, cytotoxic	Oesophageal, chronic myeloid leukaemia, urinary bladder, melanoma, glioma, hepatocellular, breast cancers

3.	<i>Catharanthus roseus</i>	Myelosuppression alters microtubular dynamics, inhibits cell proliferation	Lymphatic leukaemia, myeloid leukaemia, Wilms tumour, Ewing sarcoma, Kaposi sarcoma, neuroblastoma, rhabdomyosarcoma
4.	<i>Tinospora cordifolia</i>	Induce apoptosis, reduce cell proliferation, and inhibit the expression of cancer genes	Oral, melanoma, breast, colon, cervical
5.	<i>Plumbago zeylanica</i>	Induce cell death, autophagy, cell cycle arrest, cytotoxicity, and inhibit cell migration	Cervical, breast, hepatoma, oesophageal, oral, lung, kidney, tongue, brain, prostate, melanoma, leukaemia, Ehrlich
6.	<i>Bauhinia variegata</i>	Protective effect against cell proliferation, cytotoxic, antitumor, antioxidant	Ovary, lung, breast, leukaemia, prostate, Ehrlich ascites
7.	<i>Allium sativum</i>	Chemoprotective, antioxidant, tumour growth inhibition, antimutagenic	Hepatocellular carcinoma
8.	<i>Ocimum tenuiflorum</i>	Antioxidant, immunomodulator, antiradiation, cancer preventive, cytotoxic	Sarcoma, cervical, epithelial, skin, papilloma, fibroblast
9.	<i>Curcuma longa</i>	Antimutagenic, antitumor, induce apoptosis, inhibit proliferation	Breast, colorectal, prostate, skin, pancreatic, brain, head and neck cancers

DISCUSSION

Ayurvedic medicinal plants exhibit diverse bioactive compounds that may contribute to cancer prevention and management through multiple molecular mechanisms. These phytochemicals possess antioxidant, anti-inflammatory, immunomodulatory, antiproliferative, and pro-apoptotic properties that help counteract key processes involved in carcinogenesis. Experimental studies suggest that these herbs can modulate oxidative stress, regulate cellular signalling pathways, inhibit tumour cell proliferation, suppress angiogenesis and metastasis, induce apoptosis and autophagy, and interfere with cell cycle progression.

Several medicinal plants have also demonstrated the ability to selectively target cancer cells while exerting minimal effects on normal tissues. Their bioactive constituents may influence mitochondrial function, inhibit abnormal gene expression, reduce DNA damage, and enhance immune surveillance against malignant cells. Furthermore, certain plant-derived compounds, such as curcumin, plumbagin, and vinca alkaloids, have shown promising anticancer effects through the modulation of multiple cellular and molecular targets.

The multitargeted nature of Ayurvedic herbs, coupled with their potential to improve host immunity and quality of life, highlights their value as complementary agents in integrative oncology. However, further preclinical studies, well-designed clinical trials, and mechanistic investigations are required to establish their efficacy, safety, and therapeutic applications in evidence-based cancer management.

CONCLUSION

Ayurvedic medicinal plants represent a valuable source of bioactive compounds with potential roles in cancer prevention and supportive management. Numerous experimental studies have demonstrated that herbal constituents possess antioxidant, anti-inflammatory, immunomodulatory, and antiproliferative activities that may inhibit tumour growth, delay disease progression, and suppress metastasis. Additionally, certain herbs may help alleviate treatment-related adverse effects and improve the overall quality of life of cancer patients when used as complementary interventions.

Cancer prevention remains a cornerstone of effective disease control and can be achieved through healthy lifestyle practices, including tobacco and alcohol cessation, maintenance of a healthy body weight, balanced nutrition, regular physical activity, and minimizing exposure to environmental carcinogens. Early detection and timely intervention further contribute to improved clinical outcomes.

Although substantial preclinical evidence supports the anticancer potential of Ayurvedic medicinal plants, robust clinical studies are still required to establish their efficacy, safety, and therapeutic applicability. The integration of traditional Ayurvedic knowledge with contemporary biomedical research may facilitate the discovery of novel plant-derived anticancer agents and contribute to the development of safer, more holistic approaches to cancer care.

REFERENCES

1. World Health Organisation. Cancer [Internet]. Geneva: WHO; [cited 2025 Apr 7]. Available from: <https://www.who.int/health-topics/cancer>[Crossref][PubMed][Google Scholar]
2. Kuttan R, Bhanumathy P, Nirmala K, George MC. Potential anticancer activity of turmeric (*Curcuma longa*). *Cancer Lett.*, 1985 Nov; 29(2): 197-202.

3. Kuruppu AI, Paranagama P, Goonasekara CL. Medicinal plants commonly used against cancer in traditional medicine formulae in Sri Lanka. *SaudiPharm. J.*, 2019 May; 27(4): 565-73.
4. Joshi A. Phytochemical analysis of *Taxus baccata* and evaluation of its anticancerous properties in BHK-21 cell line. *J. Pharm. Res.*, 2014; 14(1): 008.
5. Lébri M. Phytochemical analysis and in vitro anticancer effect of aqueous extract of *Abrus precatorius* Linn. *Der. Pharma Chemica.*, 2015; 7(8): 112-7.
6. Hiradeve S. Evaluation of anticancer activity of *Plumbago zeylanica* Linn. leaf extract. *Int. J. BiomedRes.*, 2011; 1(2): 52.
7. Kothari AB. In vitro studies on antimutagenicity of water, alcoholic, and oil extracts of *Semecarpus anacardium*. *Indian J. Pharmacol.*, 1997; 29(5): 301.
8. Pandey S. In vivo antitumor potential of extracts from different parts of *Bauhinia variegata* Linn. against B16F10 melanoma tumour model in C57BL/6mice. *Appl. Cancer Res.*, 2017; 37: 33.
9. Nourazarian SM. Effect of root extracts of medicinal herb *Glycyrrhiza glabra* on HSP90 gene expression and apoptosis in HT-29 colon cancer cell line. *Asian Pac. J. Cancer Prev.*, 2015; 16(18): 8563.
10. Moringa Oleifera extracts modulate oxidative damage and cytotoxicity induced by hydrogen peroxide. *Hum. Exp. Toxicol.*, 2011; 30(9): 1359-69.
11. Antitumor studies with the extract of *Calotropis procera* root employing Hep-2 cells. *Indian J. Exp. Biol.*, 2009; 47(May): 343-8.
12. Sharma PV. *Sushruta Samhita Nidanasthana*. Varanasi: Chaukhamba Sanskrit Series; 2004; 1.