

Ayurveda for Cancer Treatment

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Abstract

Plant based traditional medicine systems are playing a vital role for health care in both developing and developed countries. Ayurveda, the traditional Indian holistic medicine, uses plant derived products for cancer care, is not merely a system of medicine. Rather, it is a way of life. Even with great advancements in treatment and control of cancer, western medicine has significant deficiencies such as dose-limiting toxicity and drug resistance. Moreover, the enormous search for novel compounds is escalating, in which Ayurveda with its huge active compound repository can lend a hand to find new potential leads. Currently, global population is widely accepting the Ayurvedic medicine as the plant based treatments can rescue the patients from adverse side effects of western medicine. The Ayurvedic science is believed to add a step on to the curative aspects of cancer and lead to healthy living by fostering healthy cells in addition to controlling/killing the cancer cells. The scientific evidence of Ayurvedic medicine is increasing, and a number of plants used in Ayurveda have scientifically proven to possess anticancer effects. In this editorial, we emphasize on combining the modern western and traditional medicines such as holistic Ayurveda which would be of great advantage to manage symptoms, control side-effects and improve the state of mental wellbeing. This integrated approach would make the cancer patients live and not just to exist.

Keywords: Ayurveda; Cancer; Herbal medicine; Western medicine; Health

Introduction

Traditional systems of medicines always played vital role in meeting the global health care needs in past, continuing at present and shall also play key role in future. India is well known for its rich, centuries-old heritage of traditional medicinal systems. Ancient Vedas and other scriptures point out the practice of traditional medicines in India. Traditional Indian medical system functions through two social systems: (1) a well-organized and codified Classical Health Traditions and (2) rich and diverse Oral Health Traditions that are not organized or codified. Classical health traditions such as Ayurveda, Unani and Amchi have developed from Vedic/classical texts and treatises. Oral health traditions have developed from traditionally trained folk healers/village physicians/tribe groups/ancient copper plate or palm leaf writings [1]. Medicinal systems that either originated from India or came to India from outside and got assimilated into Indian culture are classified under the Indian systems of medicine and Homeopathy (ISM&H). Six recognized Indian systems of medicines are Ayurveda, Siddha, Unani, Yoga, Naturopathy and Homeopathy. Though Homeopathy is originated in Germany, it came to India in early 18th century and got completely assimilated, accepted and enriched in Indian system of medicine [2].

The holistic medicine Ayurveda, a branch of Atharvaveda is of great antiquity and dates back to about 5000 BC. It is the repository of and treatise on the knowledge and wisdom of great sages and seers, acquired, attempted and bequeathed to succeeding generations. The name Ayurveda comes from two Sanskrit words, *ayus* (life) and *veda* (knowledge). Ayurveda emphasizes on healthy living through maintaining the balance of the body. Ayurveda is well documented in three main treatises; Charaka Samhita (text on ancient Indian medicine), Susruta Samhita (text on ancient Indian surgery), Kashyapa Samhita (text on gynecology and child health). There are a number of plants which have been mentioned in these three treatises of Ayurveda to guide the preventive, promotive and curative aspects of the practice of Ayurveda - Charaka Samhita (1100 plants), Susruta Samhita (1270 plants), Astanga Hridaya (1150 plants) [1,2]. Ayurveda is known as

Astanga Ayurveda, which means that which is made up of 8 parts. The 8 major divisions of Ayurveda are as follow as: (1) *Kayachikitsa* (Internal Medicine), (2) *Kaumar Bhritya* (Pediatrics), (3) *Bhootavidya* (Psychiatry), (4) *Shalaky*a (Otorhinolaryngology and Ophthalmology), (5) *Shaly* (Surgery), (6) *Agada Tantra* (toxicology), (7) *Rasayana* (Geriatrics), and (8) *Vajikarana* (Aphrodisiacs and Eugenics) [3]. Ayurveda considers health as the equilibrium of the three biological humours (*doshas*), the 7 body tissues (*dhatu*s), proper digestion and a state of pleasure or happiness of the soul, sense and mind [4]. The treatment involves the restoration of the balance of disturbed *doshas* through regulating diet, correcting life-routine and behavior, administration of drugs and resorting to preventive non-drug therapies known as *Panchkarma* (Five processes) and *Rasayana* (rejuvenation) therapy. Many factors such as the status of tissue and end products, environment, vitality, time, digestion and metabolic power, body constitution, age, mind, body compatibility, type of food consumed are taken into consideration before commencing the treatment. Though it is ancient in origin, the system is modern in its approach [1,2].

How can cancer be treated by Ayurveda?

Cancer is the second leading cause of death worldwide and chemotherapy is the commonly used treatment method. The dose-limiting toxicity and development of drug resistance hamper the treatment with chemotherapeutics in the clinic. Cancer patients, who are crippled with this disease and suffering from harmful side effects from chemotherapeutic drugs are turning back to natural remedies hoping for a better cure. Natural therapies such as Ayurveda, make

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use of plant-derived products in cancer treatment, which may reduce adverse side effects. This traditional Indian medicine of plant drugs has been successfully used in cancer treatment from ancient times. Cancer treatment with Ayurveda goes back to 7th century BC, where Atreya and Dhanwanthari used herbal medicines for treating early stages of cancer. Ayurveda describes cancer as inflammatory or non-inflammatory swelling and mention them as either *Granthi* (minor neoplasm) or *Arbuda* (major neoplasm). Herbal decoctions consisting of various herbs with anticancer property are commonly used in Ayurveda. Many of the herbs used in Ayurveda have scientifically proven for their anticancer properties, e.g., *Andrographis paniculata*, *Annona atemoya/muricata*, *Phyllanthus niruri/amarus*, *Piper longum*, *Podophyllum hexandrum linn.*, *Tinospora cordifolia*, *Semecarpus anacardium* etc. [5].

There is a wide variety of Ayurvedic plants, which were proved to possess cytotoxic potential against various cancers *in vitro* and *in vivo*. The following are just a few selected examples of the plants with cytotoxic potential: *Curcuma longa*, *Withania somnifera*, *Achyranthes aspera*, *Allium sativum*, *Annona muricata*, *Bolbostemma paniculatum*, *Cannabis sativa*, *Centaurea ainetensis*, *Camellia sinensis*, *Daphne mezereum*, *Gossypium hirsutum*, *Hydrocotyle asiatica*, *Hypericum perforatum*, *Nervilia fordii*, *Oroxylum indicum*, *Picrorrhiza kurroa*, *Rubia cordifolia*, *Salvia miltiorrhiza*, various *Scutellaria* species, *Silybum marianum*, *Smilax china*, *Strychnos nuxvomica*, *Taraxacum officinale*, *Zingiber officinale* etc. Certain Ayurvedic plants have shown to possess immunomodulatory effect to kill cancer cells, which include *Tinospora cordifolia*, *Apis mellifera*, *Bidens pilosa*, *Andrographis paniculata*, and *Mangifera indica* [6]. A recent review comprising explains the chemo- and radio-sensitizing activities of ayurvedic plants. Some of the examples include tetrandrine (from root of *Stephenia tetrandra*), withaferin-A (from *Withania somnifera*), echitamine chloride (from stem bark of *Astonia scholaris*), rohitukine (from *Amoora rohituka*); curcumin (from *Curcuma longa*), and perillyl alcohol and berberine (from *Tinospora cordifolia*) [7].

To control the harmful side effects of chemo- and radiotherapy, Ayurvedic anticancer medicines can be used as adjuvants to improve the quality of life [8-10]. The Ayurvedic semi-solid pharmaceutical preparation *Rasayana avaleha* improves the quality of life, if taken as adjuvant along with chemo- or radiotherapy [11]. Classical Indian Ayurvedic drugs such as *Amritaprasham*, *Ashwagandha Rasayana*, *Brahma Rasayana*, *Chyavanprasha*, *Narasimha Rasayana*, and *Triphala Churna* were found to be radio-protective in cancer treatment [12]. Figures 1 and 2 exemplifies the different types of plants used in Ayurvedic cancer therapy.

Conclusion and Perspectives

The most ancient wisdom and science of life, Ayurveda, has a long history and its basic principles are valid even today. Less or minimal effectiveness and severe toxic side effects of current cancer therapies draw the global attention towards herbal medicine to arrest the insidious nature of this disease. In addition, more than 80% of the world's population cannot afford modern medicines. Western medicine provides symptomatic treatment and largely ignores the underlying conditions, whereas Ayurveda treats the disease from root of origin. Ayurveda plays an important complementary role to western medicine in treatment efficiency. In addition, most of the lowest economic strata can benefit by choosing Ayurveda instead of western medicine as Ayurveda provides cost-effective treatments. Principally, the long-term wellbeing is important for vulnerable communities, who

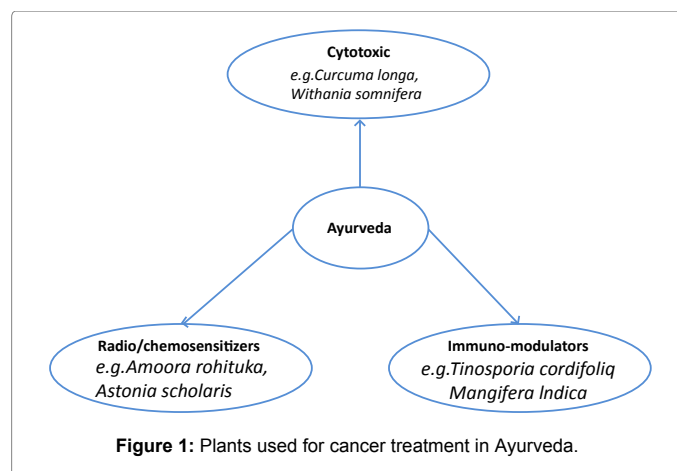


Figure 1: Plants used for cancer treatment in Ayurveda.

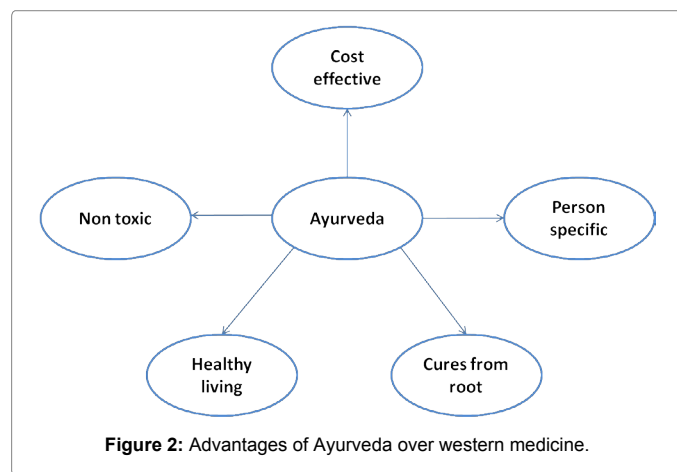


Figure 2: Advantages of Ayurveda over western medicine.

rely on healthy bodies for a steady income, which can be achieved by opting Ayurveda treatment. Ayurvedic supplements protect healthy cells, regulate body metabolism and treats the disease, e.g., halts cancer progression or acceleration.

Ayurveda is critically patient oriented, i.e., the Ayurvedic physician diagnoses, treats and dispenses medicine to every individual patient. This vital principle can form the basis for personalized western medicine. Western medicine is constantly seeking novel compounds for better treatment of various disease conditions. The collaboration between traditional medicinal systems such as Ayurveda and contemporary western biomedicine would be more advantageous for treating complex disease such as cancer in a more efficient manner. A noteworthy point is that many Ayurveda concepts have not yet been sufficiently scientifically validated. Hence, collaborations between these two medicinal systems would be mutually beneficial. Amalgamating the best of eastern traditional knowledge such as Ayurveda and western biomedicine has contemporary significance and will help to deal with the challenges in the global health care sector. Even though not authenticated by research, the ancient knowledge of holistic Ayurvedic medicine immersed in wisdom of nature may one day bring an end to suffering.

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