



# A Review Study On Perspective Of Agadtantra In Cancer

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## ABSTRACT

Agadtantra focuses on toxicology which includes study of different types of toxins, their ill-effects on the body and management for the same through Ayurveda as well as modern medicine. Various Agada kalpa or yoga serve as an antidote for poisoning, comprises combination of antitoxic medications, along with antioxidant, hepato-protective and immune-modulator substances, etc. Cancer is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body. Toxic carcinogens are the substances that can cause cancer. These substances can be found in the environment, workplace, and even in food. The concepts explained in Agadtantra such as Dooshivisha (latent or denatured poisons), Garavisha (artificial poisons), sthavara visha (Plant based poisons) and also Viruddhahara (Incompatible food) can be considered as the etiological factors and responsible for pathology of cancer. These contribute to cellular damage and mutations that lead to cancer. Chemotherapy and radiotherapy are two distinct cancer treatments that share the goal of killing or slowing the growth of cancerous cells. As these treatments also cause toxic effects on body, Ayurveda focuses on detoxification of the body i.e. eliminating all these toxins by shodhan karma such as vaman, virechan, basti etc. Shaman chikitsa can also be given such as various agada kalpas (formulations) that are useful to reduce or to eliminate the toxicity of chemotherapy and radiotherapy.

**Keywords** – Agadtantra, Cancer, Toxic Carcinogens, Dooshivisha, Detoxification, Agada Yoga

## INTRODUCTION

Agadtantra, branch of Ayurveda that focuses on toxicology which includes study of different types of toxins, their ill -effects on the body and management for the same through Ayurveda as well as modern medicine. The Ayurvedic texts contain a wealth of information about various Agada Yoga which are the substances employed to address poisoning cases. Literature mentioned numerous Agada Yoga along with their unique properties and indications for treating toxicity. Agada Yoga helps to neutralize toxins and restore balance of the systems. Agada serves as an antidote for poisoning, comprises combination of antitoxic medications, along with antioxidant, hepato-protective and immune-modulator substances, etc.

Cancer is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body. Possible signs and symptoms include a lump, abnormal bleeding, prolonged cough, unexplained weight loss, and a change in bowel movements . While these symptoms may indicate cancer, they can also have other causes. Over 100 types of cancers affect humans. Normal cells have a controlled life cycle, but cancer cells ignore these controls and grow and divide rapidly. Cancer cells can form tumors, which are lumps of abnormal tissue. Metastasis is pathology where the cancer cells can spread to other parts of the body through the bloodstream or lymphatic system. These types of cancer often caused by changes in genes, which can be inherited or develop over time due to environmental factors like smoking, diet, and radiation and many more.

## AIMS AND OBJECTIVES

- ✓ To identify the toxic carcinogens in daily life.
- ✓ To study toxicities due to chemotherapy and radiotherapy and its Ayurvedic approach.
- ✓ To study role of Agada yoga in the prevention and management of toxic effects due to chemo and radiotherapy.

## MATERIAL AND METHODS

Toxic carcinogens are the substances that can cause cancer and are also toxic, meaning they can cause harm to the body even if they don't directly cause cancer. These substances can be found in the environment, workplace, and even in food. Here's a more detailed look at toxic carcinogens:

Examples of Toxic Carcinogens are Chemicals and also some heavy metals like arsenic, lead etc. some substances of abuse e.g. Tobacco and tobacco smoke, Alcohol, Processed food materials e.g. fried food items, chicken, sausages, meat etc, naturally occurring radioactive gases e.g. Radon, UV radiation from the sun or tanning beds, Some medications also increase the risk of cancer. These Toxic carcinogens can damage DNA, which is the genetic material in our cells. This DNA damage can lead to mutations that can cause cells to grow uncontrollably, leading to cancer. Examples of cancer related to specific toxic carcinogens:

Carcinogens	Cancer	Occupational Sources
Arsenic	Skin, Lungs	Medications, Electricians
Hair dyes	Skin, Bladder	Barber, hairdresser
Soot	Skin	Chimney cleaners
Benzene	Lymph nodes, Blood Painting	detergents, petroleum
Asbestos	Lungs, Mesothelioma	Floor tiles, roof
Cadmium	Prostate	Painting, battery
Beryllium	Lungs	Nuclear reactor, Missile fuel
Nickel	Lungs, Nose	Ceramics, ferrous alloys,
Smoke	Colon, Lungs	Air pollution, car smoke

If we deeply study the principles of Agadtantra and also the etiology of cancer like diseases, we can infer that the diseases are mostly due to toxic substances which enter through food, air, water or medicines etc. Some of the toxins produce acute symptoms and some produce symptoms after long period of time. If we observe carefully, the concepts explained in Agadtantra such as Dooshivisha (latent or denatured poisons), Garavisha (artificial poisons), sthavara visha (Plant based poisons) and also Viruddhahara (Incompatible food) can be considered as the etiological factors and responsible for pathology of cancer. These contribute to cellular damage and mutations that lead to cancer. Dooshivisha is the low potency poison retained in the body for long period without producing any grave or fatal symptoms, but slowly it vitiates the dosha & then vitiates rasa-raktadi dhatu (tissue). Same pathology is seen in cancer. Garavisha refers to a type of poison that is artificially created, often from a combination of substances that may not be inherently toxic but become toxic when mixed. It's a concept related to the idea that exposure to certain combinations of substances, like chemical additives in food or environmental pollutants, like commercial chemicals, or certain drugs can lead to health problems over time. Sthavara visha encompasses plant-based poisons that can be ingested or come into contact with the body, potentially leading to various toxic effects, including carcinogenicity. Examples include certain types of poisonous plants like Vatsanabha, Karaveera, and Digitalis. Some foods which are incompatible with dhatu are viruddha aahar. Viruddha aahar is so intimately related to 'Amavisha' that it leads to symptoms of poison. Hence these can be considered as carcinogens causing cancer like diseases. Along with these, Agadtantra also considers Food additives and preservatives, Pesticides, cosmetics etc. as carcinogens which are said to be causing various types of cancer. Agadtantra emphasizes the importance of understanding the nature of these toxins and their potential effects on the body. The carcinogenic effects of these toxic substances depend on exposure levels and duration of the toxins, individual factors e.g. genetic background and other factors can also play a role in determining the risk of cancer development etc. Also not all carcinogens cause cancer. Just because a

substance is classified as a carcinogen doesn't mean it will necessarily cause cancer in everyone who is exposed to it.

## **TOXICITIES DUE TO CHEMO AND RADIOTHERAPY AND ITS AYURVEDIC APPROACH**

Chemotherapy and radiotherapy are two distinct but related cancer treatments that share the goal of killing or slowing the growth of cancerous cells, but they achieve this through different mechanisms. Chemotherapy uses drugs, often administered intravenously, to target and destroy rapidly dividing cells, including cancer cells, throughout the body. Radiation therapy, on the other hand, employs high-energy beams (like X-rays) to target and damage the DNA of cancer cells, primarily within a specific area of the body. The Potential Side Effects of chemotherapy are nausea, vomiting, fatigue, loss of appetite, hair loss, changes in blood counts and a weakened immune system due to its impact on healthy, rapidly dividing cells as well. And radiotherapy Can cause side effects like skin irritation, fatigue, and nausea. These are generally more localized than chemotherapy side effects. As above stated, Chemotherapy and radiotherapy, are effective for cancer treatment, but can cause various side effects or toxicities. Ayurveda, an ancient Indian system of medicine, offers a complementary approach to manage these side effects by addressing the underlying imbalances in the body.

### **Chemo – Radio therapy Induced Toxicities and Ayurvedic Approach**

As Chemotherapy leads to systemic side effects, Ayurveda focuses on detoxification of the body i.e. eliminating all the toxins by shodhan karma such as vaman, virechan, basti etc. for kapha dominant symptoms vaman can be given. For pitta dominant symptoms virachan and vata dominant condition basti can be given to eradicate the toxins produced by chemotherapy in patient. It also focuses on improving digestion, enhancing immunity, and reducing inflammation to address these above mentioned issues.

**Nausea and Vomiting** - Powder of haritaki (terminal chebula) mixed with honey or the Juice of resins or cold water processed with tender leaves of mango (*mangifera indica*) and jamun (*Syzygium Cumini*) are all indicated for nausea and vomiting. Also Eladi churna is multi-drug preparation which has potential of curing any kind of vomiting.

**Fatigue** - Deterioration of the general physical health with reduced exercise tolerance and muscle strength and fatigue are common manifestations of chemotherapy related side effects. The drugs which are having the property of promoting strength (Balya) such as Ashwagandha (*Withania Somnifera*) and Shatavari (*Asparagus Racemosa*) are prescribed.

**Diarrhoea** – 50-60 % of patients receiving chemotherapy suffer from diarrhea. Pippalyadi yoga and dadimasthaka churna are also few of the multi-drug preparations indicated in diarrhea. Brahmi (*Boswellia*

serrata) and Jatiphala (*Myristica fragrans*) are other herbs with proven anti-diarrheal properties can be given to patient in proper dosage.

**Anemia** – Dhatriavaleha is one of the best multidrug preparations for panduroga mentioned in ayurveda texts. Cow's urine with haritaki or with triphala decoction or cow's milk is also indicated in case of anemia. Here gomutra also has anti carcinogenic effects.

**Sleep Disturbances** - Disturbed sleep is a major problem in patients receiving radiotherapy. Ayurveda considers sleep as one of the important components of health. Kshirbala oil and mahamasha oil are also considered good for body massage. The herbs Shweta Musli (*borivilianum*), Sarpagandha, Brahmi (*Boswellia serrata*) and Atmagupta (Velvet bean) have significantly increased sleep quality in a scientific study.

**Skin Toxicity** - Cutaneous adverse effects are among the more common adverse effects of newer anti-tumor drugs, mostly in radiotherapy patients. They occur in up to 34% of patients receiving multikinase inhibitors. Commonly found cutaneous conditions side effects are - seborrhea, epidermal atrophy, xerosis cutis, itching, dry eczema and vulnerability of the skin to fissures - especially on the fingers, toes, and heels. Bala taila is can be used for massage, enema or internal use also. So these treatments with bala taila may help to overcome skin related problems.

**Hepatotoxicity** - Ayurveda recommends systemic detoxification therapy (panchakarma) depending on dominance of the dosha (considering the strength of the patient). Massage and medicated enema are also recommended. The multi-drug preparations such as rohitaka ghrita, panchakola ghrita, pippalyadi churna, panchgavya ghrita etc. are recommended in such conditions associated with liver and abdominal diseases. Ayurvedic herbs like Brahmi (*Bacopa monnieri*) and Triphala can help regulate digestion and reduce nausea and vomiting.

**Anorexia (Loss of Appetite)**- After chemo and radiotherapy, patients' appetite is reduced considerably. So yoga like hingvasthak churna, Shivakshar churna etc. can be given to improve appetite. Also herbs like Haridra (*Curcuma longa*), Ashwagandha (*Withania somnifera*) and Guduchi can stimulate appetite and improve overall digestive function.

**Blood Count Reduction** – Due to chemotherapy, patient may get pancytopenia which affects overall immunity of the body. Ayurvedic treatments like Rasayana therapies and specific herbs can help restore blood counts by boosting bone marrow function and promoting the formation of healthy blood cells.

**Mucositis** - Oral mucositis is one of the common and serious complications of chemotherapy. Hemotherapy induced mucositis is highly painful condition without any definite cure. Mouth gargles with kalaka churna mixed with liquids such as water and honey is indicated for such health problems. Local application of Yashtimadhu (Glycyrrhiza Glabra or licorice) powder (mixed with honey) in the oral cavity, prior to radiotherapy, reduces radiotherapy induced mucositis. In such cases another multi-herb preparation called Khadiradi vati is advised for chewing several times in a day.

### **General Ayurvedic Approach -**

**Diet** - A light, easily digestible diet, including soups, gruel, and fresh juices, is recommended during chemotherapy and radiotherapy.

**Lifestyle Modifications** - Yoga, meditation, and stress-reducing practices can be beneficial in managing the psychological impact of cancer and its treatment.

**Compatibility with chemotherapy/radiotherapy** - Overall ayurvedic treatments are safe, but it is recommended to discuss about these medicines with oncologists to avoid further complications further.

### **DISCUSSION**

In everyday life there are various products that we use, can cause cancer such as talcum powder, shampoo, soap, foundation, perfume, hairspray, lipstick, hair dye etc. Also environmental pollution, foods which include packaged, processed and preserved food items etc. lead to accumulation of toxins called as dushi visha (cumulative toxins). And in modern researches, these things are proved to be carcinogenic up to certain extent. Similarly Garavish (artificial poisons), sthavara visha (Plant based poisons) and also Viruddhahara (Incompatible food) are considered to be carcinogenic.

In modern medicine, cancer is treated by chemo and radiotherapy as per patient's type of cancer. In Chemotherapy first few doses will act as therapeutic doses and it destroys the neoplastic cells and doesn't cause much damage to healthy tissues. But further doses will cause serious damage to healthy tissues. Body fails to eliminate the excess drugs which lead to accumulation of these chemicals in the body and causes health problems for a long period.

These chemicals cannot be excreted from the body and indigestible by our body systems which lead to production of Ama. The Ama produced shows the lakshana of visha.

In radiotherapy, the radiation of the chemicals on localized part can induce serious toxic effects on the body. Hence, these side effects of chemo and radio therapy itself are considered as Garavisha or Amavisha. In Ayurveda for the removal of such toxins various detoxification methods i.e. Panchkarma and associated karma are described. E.g. Snehan, Swedan, Raktamokshan, Vaman, Virechan, Basti, Nasya, Shirodhara etc. This is Shodhan method. Also to pacify the remaining toxic effects Shaman chikitsa can be given such as various agada kalpas (formulations) that are useful to reduce or to eliminate the toxicity of these therapies.



## CONCLUSION

Due to westernization and urbanization, each & every individual is frequently exposed to many toxic substances which are mostly carcinogenic. Factors such as life style, level of physical activity, environmental pollution, personal hygiene, foods are the major causing factors of cancer. These factors are said to be dooshivisha, garavisha, sthavar visha or amvisha in Agadtantra of Ayurveda. Chemotherapy and radiotherapy is the management for various types of cancers. But as the course of these treatments advances, these also start showing their toxic effects, which again can be considered as above visha. This article emphasizes on Ayurvedic approach on chemo-radiotherapy induced side effects in cancer patients and scope of treatment through Ayurveda. Ayurvedic therapies, including detoxification (Shodhana), Shaman rejuvenation and immune modulation (Rasayana) offer satisfactory solutions to toxic effects of modern oncological treatments.

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