

## SCOPE OF AYURVEDA IN ONCOLOGY: A REVIEW

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Article Received on 05/06/2019

Article Revised on 26/06/2019

Article Accepted on 16/07/2019

## ABSTRACT

Cancer is the one word which is very scary for every human beings. Every year about 8,00,000 new cancer patients get registered with the national cancer registry program in India. Though heredity plays its role in causing cancer but that include only 5% of cancer cases, non -heredity factors such as life style, food, level of physical activity, personal hygiene, environmental pollution are the major causing factors. Due to these factors toxins get accumulated in body day by day called as cumulative toxins in Ayurveda it is nothing but dushi visha .Ayurveda is divided into eight branches Agadatantra is one of them. In this branch treatment of poison is explained and it is done by Shodhana (purification) method followed by various agada kalpas which are described in samhitas for the treatment vishas (poison).

**KEYWORDS:** Cancer, cumulative toxins, dushi visha, agada kalpas.

## INTRODUCTION

The world's population is expected to be 7.5 billion by 2020 and approximations predict that about 15.0 million new cancer cases will be diagnosed, with deaths of about 12.0 million cancer patients. Factors such as life style, level of physical activity, environmental pollution, personal hygiene, food are the major causing factors of cancer. Today due to modernisation & urbanisation each & every individual is frequently exposed to many toxic substances which are mostly carcinogenic. In Ayurveda for the treatment of toxicity shodhana and shaman methods are described . In shodhana (purification) method like enema, emetic, head evacuation, blood letting therapy is done whereas in shaman various agada kalpas (formulations) are used for the treatment of this toxicity.

## MATERIAL AND METHOD

## Carcinogenes

- A carcinogen is any substance that promotes the formation of cancer. This may be due to the ability to damage the genome or to the disruption of cellular metabolic processes.
- Two types of carcinogenic mechanisms have been identified. One is genotoxic that alter genes through interaction with DNA and other is epigenetics.<sup>[1]</sup>

## Genotoxic

- Direct or primary carcinogens: Chemicals that act without any bioactivation; for example, bis

(chloromethyl) ether, ethylene dibromide, and dimethyl sulfate.

- Procarcinogens: Chemicals that require biotransformation to activate them to a carcinogen; for example, vinyl chloride and 2-naphthylamine.
- Inorganic carcinogen: Some of these are preliminarily categorized as genotoxic due to potential for DNA damage. Other compounds in the group may operate through epigenetic mechanisms<sup>[2]</sup>

## Epigenetic

These are carcinogens that do not act directly with genetic material. Several types are possible: Cocarcinogen: Increases the overall response of a carcinogen when they are administered together; for example, sulfur dioxide, ethanol, and catechol.

Promoter: Increases response of a carcinogen when applied after the carcinogen but will not induce cancer by itself; for example, phenol and dithranol

Solid-state: Works by unknown mechanism, but physical form vital to effect; for example, asbestos and metal foils.

- Hormone: Usually is not genotoxic, but alters endocrine balance; often acts as promoter (e.g. DES and estrogens).
- Immunosuppressor: Mainly stimulates virally induced, transplanted, or metastatic neoplasms by weakening host's immune system (e.g., antilymphocytic serum, used in organ transplants).<sup>[3]</sup>

**Table 1: Biological, biophysical and biochemical association with human cancers.<sup>[4]</sup>**

Carcinogens	Cancer sites	Occupational Sources
Arsenic	Skin, Lungs	Medications, Electricians
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
Hair dyes	Bladder	Barber, hairdresser
Soot	Skin	Chimney cleaners
Ionizing radiation	Bone marrow	Radiology technicians
Burkitt's virus	Lymph node	Black people in south Africa
Chromium	Lung	Pigments, paints, preservatives
Radon	Lung	Mines, cellars
Hepatic virus- B, C	Liver	Drug users, hospital workers
Formaldehyde	Pharynx, Nose	Laboratory / Hospital workers
Gasoline	blood, Lung	Oil petroleum

### Concept of Ayurveda

- Ayurveda, the traditional system of India has an effective and well developed antitoxic treatment system.
- Agadathantra, one of the 8 classical disciplines (Ashtanga) of Ayurveda deals with management of toxicity. If we deeply study the principles of Agadathantra and 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 medicine etc.
- Some of the toxin produces acute symptoms and some produces symptoms after

A long time. If we consider Dooshivisha, Gara and Viruddhahara concepts of Agadathantra most of the etiological factors and pathology of cancer come under these three headings.

### Dushivisha

- Any kind of poison originating from inanimate or animate sources or any artificial poison (Kritrima visha) retained in the body after partial expulsion or which has provisionally undergone detoxification, by the anti-poisonous drugs, forest fire, the wind or the sun is termed Dooshivisha ( Latent poison)Due to the low potency of this poison, it usually won't causes sudden death. And also due to the enveloping (avarana) action by Kapha, this low potency poisons is retained in the body for long period without producing any grave or fatal symptoms<sup>[5]</sup>
- It slowly vitiates the dosha & then vitiates rasaraktadi dhatu (tissue). Same pathology is seen in cancer. After long term exposure to carcinogenic substances, Rasaraktadi Dhatu (tissue) get vitiated which causes the mutation of cells<sup>[6]</sup>

### Virudha and gara

- Those substances which cause 'utkleshya' of the doshas but unable to remove it from the body

constitutes Viruddha. It is also antagonistic to the dhatus. Those dravyas which are incompatible with the dhatu of the body are viruddha. Some act adversely due to their mutually contradictory properties, some by combinations, some by method of preparations, some by virtue of the place, time and dose and some by their nature.<sup>[7]</sup>

- According to Vagbhata, viruddha is so intimately related to 'Amavisha' that it leads to symptoms of poison.<sup>[8]</sup>

Ahara which is viruddha in nature is like visha and gara. Considering these we can infer that frequent exposure to carcinogens and unwholesome food habits are etiological factors of cancer. So we can treat this type of diseases effectively by the principles of Agadathantra.

### General concept of management

- The general management of Cancer. Because administration of Agadas along with general management gives more good result than administration of Agada alone. In all type of cancer visha in the form of Ama is present. So 'Ama nirharana' is the initial or first line management of all type of cancer. Sodhanam, Langhanapachanam and Langhanam are the treatment for prabhutha, madhyama and alpa dosha respectively.
- But in the case of cancer patient is very weak due to the disease. So sodhanam and langhanam should not be advisable. We can do mridulanghana and pachana, for that 'Sasundilajapeya' is given along with mild pachana oushadhas like Drakshadi Kashyam. After getting some 'bala' to the patient strong amapachana drugs like pachanamrutham Kashayam, Sapthasaram Kashayam etc can be given
- Pathyakrama stated in Visha chikithsa should be followed. Because non-veg food, Guru Ahara, Oily foods etc. will increase the Ama and thereby help the progression of disease. There is a great need of Amino acids for the growth and proliferation of

Tumour cells and also for Neovascularization (Angiogenesis) So all protein diet should be avoided. Peyadi is only advisable. Specific Agada preparations are given along with this treatment protocol

- After some days along with the above symptoms there will be
- Purpura,
- Haemorrhage,
- Mouth infection,
- Ulceration of mouth and GI tract,
- Diarrhoea,
- Hair loss etc occurs
- THESE all symptoms resemble the lakshanas of Ama, Gara and Dooshivisha. In such conditions we will have to resort treatment of dooshivisha, gara and Ama. Purification therapy followed by administration of Agada formulations and Rasayana therapy are useful.

#### Special agada formulations

- Vilwadi: hepato protective, radiotoxicity protection
- Kalyanaka: radio toxicity protection
- Ajithagadam: nephro toxicity protection
- Malatyadi agada: hemotoxicity protection
- Dhvaswakarnadi, patala paribhadradi, kataka beeja: promising water pollution controller
- Vilwadi: vibrio cholerae- ciprofloxacin
- Dushi vishari agada- lichen planus
- Bhunimbadi agada, dushivishari agada: ecoli, staphylococcus oreus, shigella sonnei, salmonella enterica
- Dhatakyadi agada: : ecoli, staphylococcus oreus, strepto coccus mutans
- Sirisha punarnva, tulasi: reproductive and developmental toxicity

#### Upkramas in management

- Snehan
- Swedan
- Raktamokshan
- Vaman
- Virechan
- Basti
- Nasya
- Pizhichil
- Shirodhara

#### DISSCUSSION

1. In everyday life there are various factors causing cancer environmental pollution, foods, products such as shampoo, foundation, perfume, hairspray, lipstick, hair dye. These factors leads to accumulation of toxins called as dushi visha (cumulative toxins).
2. In the case of cancer fresh cases do not report to Ayurvedic physicians (exceptions are there). Only those who try modern aids such as Surgery,

Chemotherapy and Radiotherapy come for Ayurvedic treatment. Chemotherapy and Radiotherapy will produce harmful toxic effects along with their beneficial effects.

3. In Chemotherapy first few doses will act as therapeutic doses and it destroys the neoplastic cells and don'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.
4. These chemicals are inexcitable and indigestible by our body systems which lead to production of Ama. The Ama produced shows the lakshanas of visha.
5. In radiation therapy, the ionization of the water content of the cells will produce peroxide and other toxins which cause toxic effects on the body. In radiation there is 'pitha' vitiation also.
6. In Ayurveda for the removal of such toxins various purification methods are described followed by various agada kalpas (formulation) that are useful to reduce or to vanish toxicity.

#### CONCLUSION

Today due to modernisation & urbanisation 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, food are the major causing factors of cancer. In Chemotherapy first few doses will act as therapeutic doses 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. Whereas in Ayurveda various purification methods are explained along with agada kalpas which helps to reduce or vanish the toxicity. Thus ayurved has tremendous scope in oncology.

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