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Role of *Ritushodhana* in Prevention of Cancer - A Conceptual Review

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ABSTRACT

Background: Health is wealth and is achieved only through practicing of Preventive medicine. But Human beings are working beyond their capacity to achieve their goals with tremendous work pressure and regardless of time neglecting their health. All these developments are taking human away from nature and causing change in food and life style leading to non-communicable disorders. In present era Cancer is the most common threatening disease which is having multi-factorial and diverse kind of etiopathogenesis. The cancer incidence in India is estimated to be 19 to 20 lakhs, according to a study by FICCI and EY. *Panchakarma* or *Shodhana Upakrama* is the only one which helps to nourish the body tissue along with rejuvenating effect. Cancer is one of the disease conditions requiring rejuvenation and *Shodhana* effect simultaneously. **Aim:** To review and analyze the role of *Ritushodhana* in prevention of Cancer. Materials and **Methods:** Review of classical textual data was gathered from *Bruhatrayis* and texts of contemporary sciences with related articles published was done to analyze the benefit of *Ritushodhana* on Cancer. **Discussion:** Procedures like *Vamana* may help in preventing occurrence of lung and oesophageal cancers, *Virechana* in liver and stomach cancers, *Basti* in colon and bone cancers, *Nasya* in oral, head and neck cancers by detoxifying, eliminating the carcinogens and rejuvenating the cells. **Conclusion:** *Shodhana* in appropriate seasons helps to expel *sanchita Malas* by not allowing carcinogens to impeach in the body which may prevent the occurrence of Cancer.

Key words: *Ritushodhana*, Cancer, Prevention.

INTRODUCTION

Global incidence and prevalence as well as the newer varieties of cancers are up surging tremendously across the globe. The projected cancer burden in India for 2021 was 26.7 million and expected to increase to 29.8 million in 2025.^[1]

Cancer is a hyper proliferative disorder that involves transformation, deregulate of apoptosis, proliferation,

invasion, angiogenesis, and metastasis. Cancer may be regarded as a group of diseases characterized by abnormal growth of cells, ability to invade adjacent tissues and even distant organs and the eventual death of the affected patient if the tumor has progressed beyond the stage when it can be successfully removed. Cancer has one thing in common i.e., multiplication of cells beyond its normal tendency with hampered Apoptosis process.

In normal cell cycle, the cell death occurs with its shedding of after particular time period but in cancer condition the cell doesn't shed off but division occurs in tremendous speed. Due to this high rate of cell division the tumour does not receive adequate nutrition and undergo ischemic nutrition.^[2]

The World Cancer Research Fund recommends limiting 'fast foods' and other processed foods high in fat, starches or sugars, as this helps control calorie intake and maintain a healthy weight. Greater body fatness is a cause of many cancers.^[3] These processed or fast

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foods may use preservatives, tasteners which have carcinogens and change in cooking habits which are incompatible, immensely affects the immunity and health of an individual.

Description regarding Cancer (*Arbuda*) is also found in the most ancient treatises of *Ayurveda* like *Charak Samhita* and *Sushruta Samhita*. These *Acharyas* describe cancer as inflammatory or non-inflammatory swelling and mention them either as *Granthi* (minor neoplasm) or *Arbuda* (major neoplasm).^[4,5]

Literary meaning of *Arbuda* is a lump or mass. According to the description given by *Sushruta*, *Arbudas* are gradually increasing mass of big size, globular in shape, fixed with deeper structure, usually do not suppurate, giving occasional pain and can occur in any part of the body. It can involve *Dhatu*s like *Mamsa* and *Rakta* due to vitiation of *Tridosha*.^[6]

Ayurveda mainly concerns maintenance of health, preventing and treating diseases by following many procedures among which *Panchakarma* is one, where *Ritu Shodhana* is followed irrespective of *Swastha* or *Atura*. *Shodhana* in appropriate seasons helps to expel *Sanchita Malas*, otherwise further accumulation leads to aggravation of *Doshas* and even causes threat to life.

It mainly expels out the vitiated *Doshas* which occur due to repeated undue *Ahara*, *Vihara* in daily routine as well as seasons. One who lives according to *Dinacharya*, *Nishacharya*, *Ritucharya* as described will never suffers from severe disorders caused by environmental, seasonal, or external factors otherwise he would land up with any diseases.^[7]

CANCER

The word Cancer is derived from the Greek meaning 'CRAB' because of large number of prominent veins surrounding a growth suggesting a picture like claws of a crab. Cancer is used for its adherence with such obstinacy to the part i.e., like a crab and cannot be separated from each other. Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other tissues. The abnormal cells are termed cancer cells, malignant cells, or tumor cells.

Cells become cancer cells because of deoxyribonucleic acid damage. DNA is in every cell and it directs all the cell's actions. In a normal cell, when DNA gets damaged the cell either repairs the damage or the cell dies. In cancer cells, the damaged DNA is not repaired, and the cell doesn't die like it should. Instead, the cell goes on making new cells that the body doesn't need. These new cells all have the same abnormal DNA as the first cell does. Cancer has largely remained incurable due to its complexity and its ability to spread rapidly and uncontrollably.

Causes of Cancer

Tobacco is a major factor in the aetiology of 30% of cancers, including those of the lung, nasopharynx, bladder and kidney, and these could be prevented by smoking cessation. Diet and alcohol contribute to a further 30% of cancers, including those of the stomach, colon, oesophagus, breast and liver.

Other Causative factors^[8]

1. Physical - itching, irritation, repeated trauma
2. Chemical - chronic irritation, toxins
3. Environmental pollutants - pollution, overcrowding, improper sanitation
4. Radiation - leukemia, melanoma (5- 10%)
5. Genetic factors (5-10%)
6. Default in food and life style (20-25%)
7. Stress and Depression (10-15%)
8. Lack of Physical activity
9. Human papilloma virus, Hepatitis-B - the invader theory (1-5%)
10. Smoked food, Asbestos, Arsenic, Tar, Chimney's smoke

Early signs of Cancer^[9]

When cancer begins, it invariably produces no symptoms. Signs and symptoms only appear as the mass continues to grow or ulcerates causing local symptoms. General symptoms occur due to distant effects of the cancer that are not related to direct or metastatic spread. These may include change in bowel

or bladder habit, unintentional weight loss, fever, being excessively tired, a sore that doesn't heal, unusual bleeding from any part, a thickness or lump, indigestion & trouble swallowing and an obvious change in shape and size of any part.

Therapeutic or Intervention^[10]

Anti-cancer therapy may be either curative or palliative and the approach of management would depend on individual patients. The goal of treatment shall include Palliative chemotherapy, adjuvant chemotherapy, Neoadjuvant chemotherapy and chemoprevention. Apart from which surgical treatment, systemic chemotherapy and radiation therapy are the choices among them.

Arbuda

Definition: "Arbuda" is considered as a serpent like demon conquered by Lord Indra (Moniar Williams). The literary meaning of Arbuda is a lump or mass.

Etiopathogenesis

According to Ayurveda, Cancer is a Tridoshic disorder which has the capacity to spread due to the interplay of abnormal Vata, Pitta and Kapha. Further by Mithya Ahara and Vihara the different humors are vitiated involving different Dhatus (Mamsa, Meda, Rakta, etc.) resulting in the manifestation of Arbuda.

Vagbhata mentioned that large Granthis are called as Arbuda (malignant tumours) and are of six kinds. Because of predominance of Medas and Kapha generally and due to deep rootedness, they do not suppurate.^[11] Vagbhata also explains that whenever, there is excessive formation of Mamsa Dhatu it may lead to various pathological conditions such as Galaganda, Gandamala, Arbuda, Granthi and Adhimamsa. It indicates that Mithya Ahara and Mithya Vihara probably changes local or systematic biochemical factors including the haemo-dynamics leading to the origin of Arbuda.^[12]

In most of the Cancer cases there is a wide spread metastasis and dysplastic changes with hyper-plastic organs obstructing body channels, giving rise to symptoms of disease. This suggests that Cancer is a

very complex pathogenesis including Atipravritti, Sanga, Sira Granthi, and Vimargagamana in all Dhatu.

Classification of Arbuda

These Arbudas may be classified under the following headings:

1. Types of Arbuda according to Dosha.
2. Types of Arbuda according to site.
3. Types of Arbuda according to prognosis.
4. Types of Arbuda according to Dhatu (tissue).

Sushruta describes three forms of metastasis:

1. *Raktarbuda*: when a tumor is surrounded by smaller tumors.
2. *Adhyarbuda*: Development of another tumor over the first tumor or when a tumor arises on a pre-existing site.
3. *Dviarbuda*: when two tumors arise at the same time.

The tumors which cause large secretion of fluid in the surrounding tissue, located in vital locations or channels (lymphatic system and blood vessel system), tenaciously attached to the surrounding tissues are difficult to cure.^[13]

General line of treatment

The main goal of Ayurvedic therapy is divided into four categories as *Prakritisthapani Chikitsa*, *Rasayana chikitsa*, *Roganashani Chikitsa* and *Naishtiki Chikitsa*.^[14] To achieve this line of treatments the best way is through *Shodhana*. *Shodhana* procedures can act as a curative, preventive and health promotive measure. Because *Malas* or *Doshas* which get *Sanchaya* over a period will be made to clear out at appropriate time. Too much of their accumulation leads to their aggravation and even cutting short of life itself.

DISCUSSION

Due to the modernization and industrialization various hazards have become cause for lifestyle diseases among which Cancer is the deadliest one. Causes

include the pollution of environment, food, and lifestyle. These commonly allow the *Doshas* to get vitiated day by day and lose the equilibrium state of body thus affecting immunity and health. The *Doshas* which are vitiated can be mitigated by *Langhana*, *Pachana* and *Shamana* therapies but might sometimes become aggravated again. Therefore, the proper approach would be *Samsodhana* therapies where *Doshas* will not get aggravated again ie *Panchakarma* or *Shodhana* is *Apunarbhava Chikitsa*.

As cancer manifests due to vitiation of all *Doshas* viz, *Vata*, *Pitta* and *Kapha*, it has to be managed from time to time by *Ritushodhana* procedures. When we observe the types of cancers it can occur in any part of the body in many forms or stages and the mode of action of *Ayurvedic* drugs, procedures in cancer can be elucidated by the following 3 aspects:

Anti-angiogenesis - It is a form of targeted therapy that uses drugs or other substances to stop tumors from developing new blood vessels. Without a blood supply, tumor can't grow. (Angiogenesis- beginning of blood vessels).

Apoptosis - It means programmed cell death. Cancer cells induce suicidal tendency. *Ayurvedic* drugs used in various procedures trigger the process of apoptosis in cancer cells.

Destroying stem cells - *Ayurvedic* drugs and procedures destroy cancer stem cells and so prevent metastasis.

Role of *Vamana* in prevention of cancer

Properly conducted *Vamana* removes aggravated *Kapha*, makes the body light and clears the channels of *Hrit*, *Parswa* and *Indriyas*. Toxic materials are mainly fat soluble. By *Snehana* there is dissolution of toxic material into oil and fat-soluble toxin which become membrane bound by the help of fat-soluble protein. The toxin which are firstly present in cytoplasm of cell now become membrane bound. By *Swedana* cell membrane permeability changes leading to excretion of fat-soluble protein bound toxin into circulation. The toxin which excretes into circulation by *Snehana* and *Swedana* become expelled into lumen of gut. Excretion

of all toxin and waste material from whole GIT which is collected into lumen of gut to outside through *Vamana*. In this vomitus, toxic/waste materials which are responsible for the alleviation of pathological process of various diseases like cancer are excreted out through *Vamana* after *Snehana* & *Swedana*. This may help in preventing occurrence of oral, lung cancer and oesophageal cancers which are considered to be the seat of *Kapha*.

Role of *Virechana* in prevention of cancer

Virechana clears different types of toxic materials resulted due to metabolic activity the things to be excreted through the liver and the intestinal mucosa, along with the unabsorbed residues of gastrointestinal tract. Gut secretes lot of Hormones, enzymes and neuropeptides that would be rectified by *Virechana* and thereby improves the function of distal part. *Virechana* can modify GALT (Gut Associated Lymphatic Tissue) in lamina propria of GIT, which is responsible for immunity also. This would help in prevent the manifestation of cancer of liver and gastrointestinal tract which are the seat of *Pitta*.

Role of *Basti* in prevention of cancer

Agnimandya, *Durbalata*, *Sroto Vaigunya* are major pathological entities in manifestation of any diseases. *Basti* acts at different levels where *Agni Deepana* – metabolism at tissue level, *Dhatu Vivardhana* - promotes tissue degeneration and does *Srotoshodhana* which clears the accumulated metabolic waste maintaining the integrity of *Srotas*. Hence, *Basti* acts as preventive by counteracting the above-mentioned factors.

Also due to the deranged lifestyle people are tend to suppress the urges by which *Apana Vata* gets vitiated, accumulation of waste occurs and may lead to colon or bone cancers. According to contemporary science, *Mala* can be understood as alimentary toxins, metabolic waste products or autoimmune complexes and properly performed *Basti Karma*, establish proper expulsion of the feces, urine, and the flatus, increases appetite, taste and creates euphoria. *Basti* has a regulating effect on *Apana Vata*, thus may prevent colon cancer and bone cancers.

Role of Nasya in prevention of cancer

Properly conducted *Nasya Karma* removes the aggravated *Dosha* seated above *Urdhva Jatru Pradesha* (head and neck) and clears the channels of circulation. Substances administered are lipid soluble which have great affinity for absorption through the cell wall of nasal mucosa. Non-polar hydrophobic molecules diffuse through the lipid bilayer of the plasma membrane. Such molecules include oxygen and nitrogen gases, fatty acids, and fat-soluble vitamins. It is a route of absorption of some nutrients and excretion of waste by body cells which are lipid soluble. The drug administered through nostril reach to brain, eye, ears, upper respiratory tract, oral cavity, and neck region and help in preventing oral, head and neck cancer.

CONCLUSION

Shodhana in appropriate seasons helps to expel *Sanchita Malas* by not allowing carcinogens to impeach in the body, thus prevent the occurrence of Cancer. *Ritu Shodhana* is a bio cleansing system that helps to maintain body humor balance, remove disease-causing substances from the body and prevent disease occurrence and progression.

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