Cancer Prevention Through Diet And Lifestyle: A Scientific Review Of Ayurveda Concepts In Context Of *Granthi, Apachi, Arbuda And Vrana*

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ABSTRACT: Cancer is the second largest cause of death worldwide and rapidly reeling the world population year by year. An estimation 17 million new cases are appearing per year worldwide. While these new cases will be rise up to 27.5 million per year by 2040 according to world reports. The five leading causes for cancer reported are: high BMI, Low fruit and vegetable intake, lack of physical activity, use of tobacco and use of alcohol. All of these are dietary and lifestyle related causes, so making an understanding and awareness regarding choosing right diet and lifestyle modifications is the need of time.In Ayurveda there are several causes are described for development of malignancy, such as *viruddh aaahar*, food contaminated with artificial poisons, *Acheshtaa*, *ati-madya*, *dadhisevan* and lack of internal and external purification, *sanksho bhana* etc. these all have scientific explanation. Identifying and eliminating these causative agents is necessary for prevention of cancer and related dysfunctions. In Ayurveda it is called *vyaadhianutpattikarabhava*, which is the first aim of Ayurveda system. In the same way modern scientists and dietitians also recommend nutritive agents like foods rich in antioxidants, vitamins, minerals and phytochemicals along with lifestyle modification like exercise, on the basis of scientific studies, for preventing this disease

Key Words: Cancer, *Arbuda*, *Granthi*, Lifestyle, Nutrition

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INTRODUCTION

Cancer is a term for a large group of diseases, which can affect any part of body. It is spread globally and number of cases are rapidly growing in countries with low and middle economical status. It is a leading and second largest cause of death worldwide, which not only affect that person but the whole family physically, emotionally and economically. An estimation 17 million new cases appear per year worldwide, with average 9.6 million deaths. Among them approx. 33% cases are linked to exposure to tobacco and smoke.[1] Worldwide there will be 27.5 million new cases of cancer per year by 2040 according WHO report. While in India, which is an underdeveloped country with 13.5 billion population with lack of resources, cancer Burdon is about 1.16 M new cases with 784800 deaths in 2018. In upcoming years one in ten Indian will develop cancer during their lifetime.[2]The

five leading dietary and behavioral risks for cancer are: high body mass index, low consumption of fruits and vegetables, lack of physical activity, use of tobacco and alcohol. Other causes for Cancer like hepatitis & HPV infections are responsible for 25% of cancer cases in low- and middle-income countries. The economic impact of cancer treatment was 1.16 trillion USD in 2010, which is increasing continuously. Food and lifestyle take part in cancer development in many ways. For example direct and potential introduction of carcinogenic materials into the body, cooking and metabolic process of many non-carcinogenic food products which produce carcinogenic intermediate materials, indirect constant ingestion of pesticides, fertilizers and pollutants, obesity, non-healthy working atmosphere, malnutrition, stress, conflicting mental state, repeated contact with UV rays, X-

rays, ultrasound, radioactive substances and many other epigenetic factors which trigger cancer developing genes in body.

Ayurveda is the science of life with the very first aim of maintaining the health of a healthy being or preventing the ones from developing diseases and complications. In Ayurveda it is called *vyaadhianutpattikarabhava*, which is the first aim of Ayurveda system.[3]In There are several principles are described in Ayurveda for achieving this goal, among them the role of diet and lifestyle (*Pathya-ApathyaAahar-Vihaar*) is main. Our body is made or destroyed by *Aahar* and *Vihaar* is the stimulator. As written "*Deho ayam aahar sambhavah*". Taking diet and following routine according to Ayurveda principles, specially which are specifically described for *shoth*, *granthi* and *arbuda* can definitely prevent from cancer development.

AIMS AND OBJECTIVES: -

To make a scientific and evidence-based understanding about diet and lifestyle, which may prevent from cancer.

MATERIALS AND METHODS:

A logical evidence-based review study from various texts of Ayurveda like *Charak Samhita*, *Sushurut Samhita*, *Ashtang Hridaya*, *Madhavnidanam, Kashyap samhita* etc. and various research articles on cancer and dietetics.

DISCUSSION:

Cancer is basically *vata* predominant *tridoshajvyadhi*, affecting *mamsa*, *rakta* and *medadhatu* as *dushya* according to Ayurveda. Diseases like *Shotha*, *Granthi*, *Apachi* and *Arbud* are placed and described together in most on *samhitas*, which denotes the causative factors described for one are applicable to others too. Causes (*Hetu/Nidaan*) of *Shotha* (inflammation) explained in *Charak* are: excess intake of *Amla*, *Kshar*, *Theekshan-Ushan*, *Gurudravya* and excess use of *Dahi* by a person who is weak/lean due to fasting/improper diet (*Abhaktena vidhi poorvak bhojanendur balah*), excess consumption of row food-vegetables, *viruddhaanna*, food contaminated with artificial poison, patients of piles/polyps who do not take treatment, persons who do not take *Aabhyantar-BahyaSamshodhan* time to time for purification/detoxification of body, persons with lack of physical activities (*Acheshtit*) etc. as these causes are described for *NijaShoth* are applicable for *granthi*, *apache*, *arbuda* too.[2]

While some direct causes for *granthi* explained in *sushuruta* are: excess exercise done by weak person (*Vyayamjaatairabalasya*), unwanted physical stimulation to skin/muscles (*mushtipraharadibhi*), persons with excess growth of muscle tissues (*atishayenpravriddhapradushta-mansanarasya*), persons who take non-vegetarian diet regularly, obesity (*pradushatkapha-medadhikatvat*) etc.[4]

According to modern science the causes for cancer are various epigenetic factors which act as carcinogenic like, various natural (e.g. tobacco, saccharin etc.) and artificial chemicals (e.g. preservatives, aldehydes, pesticides etc.), heavy metals (mercury, led, aluminum, nickel etc.), pollutants (sulphides, nitrates, nitrites, suspended particles etc.), infections (HPV, hepatitis etc.), radiations (x-rays, UV rays etc.).

Cancer is disease in which genetic material of cell got affected in form of gene mutation or carcinogenic gene stimulation by various triggering factors resultant irregular and uncontrolled cell growth and multiplication. Factors described by *charak* works on this level for example: continuous consumption on acidic,

pungent, spicy, heavy food, curd, tobacco by a weak person create inflammation of GIT mucosa and impairment of liver, result in ulceration, which may further develop in cancer of buccal cavity, throat, esophagus, stomach, intestinal or colon. Improper and acidic diet also decrease vit-D absorption, creates vit-D deficiency which is further supposed to a cause of breast, colon and pancreatic cancer. Patients with untreated anorectal polyps along with consumption of unhealthy diet or non-vegetarian diet often develop in colorectal cancer. Consumption of *viruddhaanna* and food mixed with artificial chemicals itself a major cause in cancer development. Such as food preserving agents, taste makers, insecticides, artificial fertilizers, some compounds like nitrites, carrageenan, BHT/BHA all have carcinogenic properties.

Some foods have materials in them that aren't carcinogenic but during their cooking process or metabolism in body produce intermediate materials which are potential carcinogenic. Such as cooking food in aluminum, low quality nonstick cooking pans, use of plastic in cookware. Alcohol consumption in more then a limit develops an intermediate product acetaldehyde, which is carcinogenic and

can damage genetic material of cells and increase mutation. Another common potentially carcinogenic food is red meat. When meat cooked at high temperature, many known carcinogens are produced, including heterocyclic amine, polycyclic aromatic hydrocarbon and acrylamide. These certainly contribute to cancer, especially colorectal.

Obesity (*pradushatkapha-medadhikatvat*) is a potential risk factor for developing cancer. Excess weight causes the body to make and circulate more estrogen and insulin hormones that can stimulate cancer growth. Cancer of uterus, gall bladder, kidney, stomach, breast and colon have been associated with obesity.[5]

Energy balance or consuming calories that we need to function well is important and helpful in reducing burden of digestion, detoxification and unnecessary hormonal influence.

On the other side food rich in micronutrients, antioxidants, dietary fibers reduce risk of cancer. Diets rich in fruits lower the risk of stomach and lung cancer, eating vegetables with carotenoids reduce risk of mouth, pharynx and larynx cancer. Diet high in non-starchy vegetables protect against stomach an esophagus cancer. Foods rich in lycopene may lower risk of prostate cancer.

Role of pranayama is also important in preventing cancer development, as it increases saturation on oxygen level in blood and promote detoxification through exhalation.

Nidaanparivarjana (eliminating the causative factors) is not only the best treatment for any disease but it is batter way to prevent any disease along with balanced and healthy lifestyle.[6] according to this principle of Ayurveda, strictly avoiding above described causative factors followed by *pathyaaahar-vihar*, *samshodhan*, *rasayansevan* and *aacharrasayan* will definitely helpful in preventing cancer development.

CONCLUSION:

cancer is a globally spread frightening *santarpan janya vyadhi* with the root causes of poor dietary and behavioral habitats. Changing in these habitats can make an impact in preventing this disease. Foods and habitats which may describe as *pathya* and *apathya* for cancer are given below:

	Pathya	*Apathya*
Foods (Aahar)	*Yav, rakt shali, puran dhania, mudag yush with trikatu and ardrak, trivritt with tail and ghrit, dashmool, patol, aamlaki, draksh, shigru, haridra, tulasi, ashvagandha, gau dugdh,* colorful fruits and vegetables, foods rich in vitamins and folates, Taking food of right time, in right quantity etc.	*Guru, teekshan-ushan, vidahi, apakva, amla bhojan,* excess *dahi,* Processed food, fried food, preserved food, sugars, smoking, tobacco, alcohol, bad fats, red meat like pork, lamb, beef, beverages, refined grain products, *adhyashana, viruddhaaaharvishmashana* etc.
Hebetates (Vihaar)	*Yatha kaala aabhyantar baahya samshodhan,* daily exercise according to body capacity, avoiding unnecessary excursion and irritation of body, house works, gardening, pranayama and *yogasana* etc.	*Acheshta* (limits constant sedentary behavior such as sitting and laying down),

Along with above *pathyas* and *apathyas*, following *Aahar-vidhi vidhaan* (*Ushana, Snigdha, Matravat, jeerne, veery-aviruddha, ishte-deshe,* Ishta *sarvopakarne, naati drut, Naati vilambit, Ajalpan, Ahasan, Tanmana, Aatmaan abhisameekshya samyak*) also make a huge impact in preventing diseases like cancer.

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