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Preventive Measures of Cancer in Ayurveda : A Review

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Abstract

Although there is much advancement in its understanding, cancer is still one among the leading causes of death. . People from every corner of world are having some health problems due to environmental pollution, which leads to oxidative stress. Changed lifestyle is also one of the greatest cause of oxidative stress. Oxidative stress in body increases and we start cellular aging. Many factors are associated for causing the cancer. It may be caused either by external or internal factors or both. Consumption of tobacco and alcohol, exposure to hazardous chemicals, ionizing radiation, infectious organisms, and other lifestyle factors comes in external factors, whereas internal factors include inherited mutations, an imbalanced hormone level, and poor immune conditions. This affect the incidence and mortality of cancer by modifying cellular systems of the organism. Internal factors such as hereditary mutation cannot be modified. Lifestyle and environmental factors are the external factors which need to be modified to control the incidence of cancer. Silent course of pathogenesis of cancer leads to poor prognosis. Early diagnosis therefore is very essential from the prognostic point of view for cancer. Looking at the pervasive nature of cancer, this may be hypothesized that the cause of cancer must be related closely to our lifestyles and environmental exposures. *Ayurveda*, an ancient health-care wisdom presents its own principles to understand the cause of disease and health. One can choose to remain healthy by following the recommended path for healthy living and even can revert to health. This review presents a comprehensive view of general principles of health proposed by *Ayurveda* and attempts to see their applicability in the field of cancer prevention.

Keywords: Cancer, Ayurveda, oxidative stress, lifestyle, mutation, ionizing

Introduction:

According to World Health Organization "Health is a state of complete physical, mental and social well- being and not merely an absence of disease or infirmity." Later the ability to lead a "socially and economically productive life" was added to it ^[1] . One of the leading causes of death around the world is Cancer. Although modern science is quiet successful in understanding cancer and its molecular basis, the knowledge about preventing or treating cancer completely is still unknown. Factors

that are associated with the causation of cancer may be external factors, internal factors or both. Consumption of tobacco and alcohol, exposure to hazardous chemicals, ionizing radiation, infectious organisms, and other lifestyle factors are external factors, whereas internal factors are inherited mutations, an imbalanced hormone level, and poor immune conditions ^[2] . They affect the incidence and mortality of cancer by modifying cellular systems of the organism. Internal factors like hereditary mutation cannot be modified. To control

cancer, external factors such as lifestyle and environmental factors need to be modified. To achieve this one should cease smoking, minimal use of alcohol, increase consumption of fruits, vegetables and whole grains, physical activity, avoid direct exposure to sunlight, consume minimal red meat, execute proper vaccinations and routine screening. Oxidative stress, caused by the overproduction of free radicals, leads to the development of many chronic diseases including cancer [3]. It has been shown that adopting changes in lifestyle can reduce over 90% of cancer incidence [4]. Although cancer is understood much better today still, the search for an ideal treatment that has minimal side effects and is cost-effective continues. It is still a major health issue that burdens high care cost and causes physical and emotional difficulties to cancer patients. Besides preventive measures, several therapeutic modalities like chemotherapy, radiotherapy and surgical treatment have been developed. Though they are very effective but very expensive treatment measures and cause serious side effects. Many times, patients develop resistance to the therapy [5]. Poor prognosis of cancer is primarily attributed to its silent course of pathogenesis. In prognostic point of view early diagnosis in cancer is very crucial. Looking at the pervasive nature of cancer, this may be hypothesized that the cause of cancer must be related closely to our lifestyles and environmental exposures. *Ayurveda*, an ancient health-care wisdom presents its own principles to understand the cause of disease and health. To remain healthy, one should follow the recommended right path for healthy living. This review presents a comprehensive view of general principles of health proposed by *Ayurveda* and attempts to see their applicability in the field of cancer prevention.

Aim : To evaluate the preventive measures of cancer according to *Ayurveda*.

Objectives-

1. To evaluate causes of cancers.
2. To evaluate preventive measures of cancer according to causes in *Ayurveda*.

Material and Method :

All the literature from classical texts of *Ayurveda*, viz, *Charak Samhita*, *Sushruta Samhita* and *Ashtang Hridaya* with their respective commentaries were reviewed. Modern medicine books were referred for modern perspective. The information from various search engines and journals.

Discussion :

Ayurveda is an ancient science of life. It has two important domains known as *Swasthavritta* and *Aturavritta*. The main cause of disease is considered to be *Mandagni* (diminished digestive power). Recent researches have shown that lifestyle modifications suppress down the occurrence of *Mandagni* related disorders [6]. *Ayurvedic* treatise are enriched with numerous preventive measures, curative medicines and procedures as well. Many researches are going in different fields of *Ayurveda* such as *Rasayana*, *Panchakarma* etc., for establishing their action in all fields of therapeutics. It is the only known system of medicine across the world which believes the need of regular purification of the human biological system from gross level to the molecular level to render it suitable for self-recovery and therapeutic responsiveness. The key principle followed in the *Ayurveda* is “*Swasthasya Swasthya Rakshanam*”, which means to maintain the health of the healthy, rather than “*Aturasya Vikara Prashamanamcha*”, means to cure the diseases of the diseased [7]. *Dinacharya* (daily regimen) and *Ritucharya* (seasonal regimen) have been mentioned for this purpose in the classics of *Ayurveda* [8]. Applying the knowledge of *Ritucharya* we can surely avoid these by practicing regimen in accordance with the *Ritu* (seasons) to maintain the harmony of the *Tridosha* and to stay healthy ever. It is now evident that ancient techniques, therapeutics (*Rasayana*), *Panchakarma* and *Yoga* etc are being accepted to accomplish the following goals of treatment :

1. Strengthen immune system.
2. Efficient detoxification system.
3. Responsive inflammatory system.
4. Optimal metabolic system.
5. Balanced regulatory system.

6. Enhanced regenerative system.

7. Harmonize the life force.

8. Free radical scavenging or anti-oxidant [9].

9. Consumption of tobacco and alcohol depends on our mind, which we can call as *Mansikvega* and for *Dharan* of *Mansikvega* (mind control), person should be aware of code and conduct (*Sadvritta*) mentioned by *Ayurveda* [10]. Human being is constantly in search of happiness and there is no happiness without righteousness. Hence all should follow the path of righteousness. The rule of good conduct, he who adapts it will attain long life, health, wealth, reputation & also the eternal world [11].

10. The code of conduct mentioned in *Ayurveda* is in accordance to that era and the problems of today need to develop new code of conduct so that we can prevent diseases occurring due to exposure to hazardous chemicals, ionizing radiations due to occupation, also the pollution & changes in environment, loss of ozone layer in atmosphere.

11. According to *Ayurveda* infection is not primary cause of any disease. Occurrence of disease depends on our immune system and not on organism [12] immune system means presence of 'Oja' in proper level in body. *Oja* provides strength to body in terms of physical, mental, immunological and resistance of body [13].

12. To strengthen the immunity *Oja* should be in its limits, *Ayurveda* states if the metabolism of *dhatu* is good the *Oja* produced is supreme as *Oja* is *Prasad Bhag* of *Dhatu*. Regular exercise and work out (*Vividhascha Chesta*) and healthy diet (*Pathyakaraha*) is must for good immunity [14]. The causes of cancer are both infections and low immune system will over by regular exercise and healthy diet. To strengthen *Oja*, herbs of *Jivaniya Gan*, milk and *Mansa Ras* has to be taken in regular diet [15].

13. Oxidative stress is a crucial factor in the development of chronic diseases including cancer. Antioxidants are thus required to counteract oxidative stress and overcome cellular damage for the prevention of oxidative stress related diseases like cancer. The antioxidants can be produced by cells endogenously or can be supplied to the cells

through food or exogenously [16]. Because of the limitations in endogenous productions of antioxidants by cells, exogenous supplements of antioxidants can satisfy the requirement and thereby reduce oxidative stress mediated cellular damage and carcinogenesis [17]. According to one study *Ayurvedic* medicine " *Jeevaneeya Rasayan*" (an *Ayurvedic* polyherb formulation) was found to increase the anti oxidant enzymes and level of glutathione content in arthritic rats. This formulation also decreased the concentration of C-reactive protein, thiobarbituric acid reactive substances and ceruloplasmin in rats [18]. Means it acts like anti inflammatory.

14. Hormonal imbalance – hormones create emotions of *Sukh* (happiness) and *Dukh* (sadness). If one follows the guidelines of code of conduct like exercising regularly, managing stress, getting enough quality sleep, quitting smoking or using tobacco products, having healthy food and maintaining healthy weight, it will give good health resulting in production of good balanced hormones. *Yoga* and meditation also helps in hormone regulation. *Yoga* has been shown to stabilize emotional imbalances, prevent the abnormal functioning of vital organs and restrain and control the nervous system [19].

15. Efficient detoxification- abnormal *Doshas*, weakened *Dhatu*s and weakened *Agni* are major risk factors which weaken immune status and predispose an individual to serious diseases such as cancer. "Ama" is a toxic, heavy, unctuous, and sticky juice which originates as a waste-product of digestion and metabolism [20]. The word "Ama" can be translated to mean "immature" or "incompletely digested" food. "Ama" builds up in persons whose digestion is either weak or overloaded with the wrong foods [21]. Individuals with weak *Agni* (digestive power) have weak digestive powers (a characteristic associated with *Kapha Prakriti*) and produce "Ama" more easily. *Ayurveda* states that simple foods (*Laghu Ahar*) minimize formation of "Ama". Consuming food or water before complete digestion of previously consumed food also causes "Ama" and leads to vitiation of all three *Doshas*. Overall, a weakened *Agni* is the root cause of

“Ama,” which is a major risk factor for disease^[22]. Since “Ama” is considered the root cause of disease, it must be fully digested before one can rectify vitiated *Doshas*^[23]. Accordingly of 10 types^[24]. *Panchakarma* is also a kind of *Langhan* so *Panchakarma* procedures for eliminating vitiated *Doshas* are only effective if preexisting “Ama” has been completely digested^[25]. Regular *Panchakarma* leads to detoxification and reduces free radicals which is one of cause of cancer.

16. *Dharan* (suppression) of *Adharniyavega* is the cause of all disease^[26], it leads to *Vatprakopa*. *Vata* is responsible for all kinds of action in body, even accumulation of *Vata* leads to inflammation^[27]. This inflammation give rise to tumors and cancers^[28].

16. Cancer is a *Santarpanothvyadhi* and to get rid of it one has to follow *Langhan*. Cause of oxidative stress is ‘Aam’ which occurs due to *Mandagni*. Hence *Langhan* or fasting (type of *Langhan* which means there should be at least 12 hours gap between two meals) is one of the preventive remedies for cancer. A study shows fasting causes autophagy. During fasting the cells break down proteins and use them for energy^[29].

17. Harmonizing the life forces- *Ayurveda* has described *Ashwasan* and *Harshanchikitsa* or *Satwawjaychikitsa* for physical and mental well being as these makes *Pranprasanna* (soul happy)^[30].

Conclusion :

The causes of cancer enlisted earlier can be prevented by following preventive measures mentioned in *Ayurveda* like :

- 1) To follow *Dincharya*, *Ritucharya* and *Sadvritta* (code and conduct), one should not suppress (*Dharan*) the *Adharniya Vega*.
- 2) Always keep mind under control (*Dharana* of *Dharniya Vega*).
- 3) Undergo *Vaman*, *Virechan*, *Raktamokshan* (bloodletting) and *Basti* in their *Prakop Kal* (aggravated time) means *Vaman* in *Vasant Ritu*, *Virechan* and *Raktamokshan* in *Sharad Ritu*, and *Basti* in *Varsha Ritu*. After doing *Panchakarma* one should take *Rasayan* and

Vajikaran treatment.

- 4) Always take healthy diet and do regular exercise including yoga and pranayama.
- 5) Take *Harshan* and *Ashwasan Chikitsa* to harmonise inner force. These are preventive measures of not only cancer but all kind of diseases.

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