



Known and unknown causes of cancer

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ABSTRACT

According to Ayurved, Cancer is a group of chronic disorders related to long term uncorrected disturbances affecting various *dhatu*s and *dosh*as. Unhealthy life styles and exposures to cancer causing chemicals are important but not the exclusive, causes of cancer. There are many other known and unknown factors initiating the cancer process. There are numerous theories to explain what causes cancer. So in order to know the importance of *hetu*(causes) and make people aware of diseases, the concept of *hetu* as a diagnostic tool has been explained in this article. For proper diagnosis of disease *hetu* is one of the

most important points for diagnosis of disease.

KEYWORDS: Cancer, *Hetu*, Causes, Factors

INTRODUCTION

Cancer is an umbrella term for a large group of diseases caused when abnormal cells divide rapidly, and spread to other tissue and organs. Borrowed from Latin cancer (“crab”), and Greek (karkínos, “crab”); applied to cancerous tumours because ‘it sticks to the part stubbornly like a crab’. Cancer is one of the leading causes of death in the world.

Cancer treatment in Ayurveda is very in-depth and holistic in its approach. Ayurveda treats the disease according to the specific nature of the patient, the aggravated body energies involved and the body tissues that are affected.

Understanding the concept of *hetu* can lead to healthy and balanced life. .finding cause (*hetu*) is more important because if the causative factors are known their avoidance can help to avoid the disease and to control the growth of the disease. Thus knowledge of cause is having prophylactic (preventive) as well as curative perspective. Soil and seed theory of cancer suggests that your body is the soil where the seed of cancer can grow. eve if the soil is ready but if cancer seeds (carcinogens) are avoided, risk of cancer can be greatly reduced. We do not know all the seed types of cancer. Cancer cannot be 100% prevented even if we follow a healthy life style. However the chances of cancer will be greatly reduced. To take care of the soil, that is our body, is mostly in our hands. About the seeds, sometimes we are helpless or in the dark.

AIM & OBJECTIVES

The aim and objective is to postulate the possible causes of cancer as per Ayurved and Modern medicine.

REVIEW OF LITERATURE

The disease process has a causative factor; this causative factor is *Hetu/Nidan*.

Synonyms - Etiology (*nidan*) has many synonyms like *nimitta, hetu, karan, yoni, ayatan, pratyay, utthan, karta and mula*.

Common Causes:

- **DOSHA HETU:** Normal accumulation, aggravation and pacification of *doshas* take place in respective seasons due to *madhura* etc. *rasa* is called *dosha hetu*. Means factors responsible for the aggravation of *doshas* comes under the heading ‘*dosha-hetu*’ in the context of *nidan* of diseases. *tridosha* (*vata, pitta, kapha*) imbalance. *Dhatwagnimandya*
- **Hereditary:** Only a small portion of cancers are due to an inherited condition. If cancer is common in your family, it's possible that mutations are being passed from one generation to the next. Inherited mutations that might increase risk of certain cancers. Having an inherited genetic mutation doesn't necessarily mean it is cancer.

Gene mutations can occur for several reasons, for instance:

1. **Gene mutations:** Born with a genetic mutation that inherited from parents. This type of mutation accounts for a small percentage of cancers.
2. **Gene mutations that occur after birth:** Most gene mutations occur after birth and aren't inherited. A number of forces can cause gene mutations, such as smoking, radiation, viruses, cancer-causing chemicals (carcinogens), obesity, hormones, chronic inflammation and a lack of exercise.

Gene mutations occur frequently during normal cell growth. However, cells contain a mechanism that recognizes when a mistake occurs and repairs the mistake.

Occasionally, a mistake is missed. This could cause a cell to become cancerous.

- **Unusual immune system reactions to cancer-low on immunity:** In some cases the body's immune system may react to the presence of cancer by attacking healthy cells.

Called para-neoplastic syndrome, these very rare reactions can lead to a variety of signs and symptoms, such as difficulty walking and seizures.

- **Cancer that returns.** Cancer survivors have a risk of cancer recurrence. Some cancers are more likely to recur than others.

1) *Vishishta- nidan - Shastra, agni, krimi* and *sarpa* etc. are called specific etiological factors. Further he has explained that the specific etiological factors are *nimitta* for *Agantuja roga* which directly produce the disease. Among specific etiological factors *visha, Shastra, agni, sthula krimi, sarpa and dansa* are gross specific etiological factors. Microorganism, *sukshma krimi* etc. are the minute specific etiological factors.

2) *Bahya hetu:* Various unwholesome diets, activities, ill effects of season and such other external factors producing disease, are called *bahya hetu*.

- **Lifestyle disorders:** Certain lifestyle choices are known to increase your risk of cancer. Smoking, drinking more than one alcoholic drink a day (for women of all ages and men older than age 65) or two drinks a day (for men age 65 and younger), excessive exposure to the sun or frequent blistering sunburns, being obese, and having unsafe sex can contribute to cancer.
- **Infections:** Some infections can cause long-term inflammation in a part of the body. This can lead to changes in the affected cells and in nearby immune cells, which can eventually lead to cancer. For example, infection with *Helicobacter pylori* (*H pylori*) bacteria might increase your risk of stomach cancer, but what you eat, whether or not you smoke, and other factors also affect your risk.

a) [Human papilloma viruses \(HPVs\)](#) are a group of more than 150 related viruses. They are called *papilloma viruses* because some of them cause papillomas, which are more commonly known as warts. Some types of HPV only grow in skin, while others grow in

mucous membranes such as the mouth, throat, or vagina. All types of HPV are spread by contact (touch). More than 40 types of HPV can be passed on through sexual contact. Most sexually active people are infected with one or more of these HPV types at some point in their lives. At least a dozen of these types are known to cause cancer. While HPV infections are very common, cancer caused by HPV is not. Most people infected with HPV will not develop a cancer related to the infection.

b) Epstein-Barr virus (EBV) infection increases a person's risk of getting [nasopharyngeal cancer](#) (cancer of the area in the back of the nose) and certain types of fast-growing [lymphomas](#) such as Burkitt lymphoma. It may also be linked to [Hodgkin lymphoma](#) and some cases of [stomach cancer](#). EBV-related cancers are more common in Africa and parts of Southeast Asia. Overall, very few people who have been infected with EBV will ever develop these cancers.

c) **Cervical Cancer Causes:** A few types of HPV are the main causes of [cervical cancer](#), which is the second most common cancer among women worldwide. Pap test has been widely available for many years. This test can

show pre-cancerous changes in cells of the cervix that might be caused by HPV infection. These changed cells can then be destroyed or removed, if needed. This can keep cancer from developing.

HPVs also have a role in causing some cancers of the [penis](#), [anus](#), [vagina](#), and [vulva](#).

- **Age factor:** Cancer can take decades to develop. That's why most people diagnosed with cancer are 65 or older. While it's more common in older adults, cancer isn't exclusively an adult disease — cancer can be diagnosed at any age.
- **Environmental factors:** The environment around may contain harmful chemicals that can increase risk of cancer. Even if a non-smoker, might inhale second hand smoke if he goes where people are smoking or if lived with someone who smokes. Chemicals used at home or workplace, such as asbestos and benzene, also are associated with an increased risk of cancer. For e.g. **Skin Cancer Causes:** Excessive solar radiations, ultra violet rays and X-Rays found in solar rays are known to cause skin

.There are manmade radiations, from X-Ray machines, radioactive isotopes and certain electrical machines. These rays, in high dose over long periods, could increase the risk of cancer.

- **Food as a cause of Cancer:** Food is the raw material, which is supplied to create the final products i.e. healthy cells, tissues, organs etc. The food is also used for energy, which is essential for all the activities. If the food we eat is deficient in the essential elements, the body cannot function properly. This may not be obvious immediately, but over the years, the bad effects would be obvious. Nowadays, most of the foods we eat are contaminated with chemicals, pollutants, germs, pesticides and insecticides. In the modern days of commercial food technology, practices like food canning, freezing, food irradiation, hybrid seeds etc are getting popular. With proper food habits, one may prevent or delay the onset of cancer. With improper food habits, one may hasten the onset of cancer.

- The malignant diseases may be classified as follows according to the description given in different Ayurvedic text books.

A) Diseases which can be labelled as clear malignancy: The diseases falling under this group may be further classified as follows:

- *Arbuda* (Neoplasia)
- *Asadhya Vrana* (Malignant ulcer)

B) Diseases which may be considered as malignancy:

This includes particularly those diseases which are labelled as *Asadhya* alongwith certain manifestations similar to malignancy. Those are *Mamsaja Osta*,

Alasa, Mamsa Kacchapa, Galaudha, Asadhya Galaganda, Tridosaja Gulma, Asadhya Vrana, Lingarsa etc.

C) Diseases Where Malignancy cannot be ruled out: Apart from the various factors mentioned earlier, there are certain other symptom or the diseases which are also considered as '*Asadhya*' and labelling them under malignancy seems to be a controversial subject. However, it is also difficult to rule out the possibilities of malignancy based on their sign and symptoms. Those diseases are *Tridoshaja Nadi Vrana, Asadhya Pradar a Asadhya Kamala and Carmakila* etc.

List of some commonly known Carcinogens

| Physical | Biological | Chemical | Nutritional | Emotional |
|---|--|---|--|---|
| <ul style="list-style-type: none"> • Sunlight-UV rays • Electro-magnetic fields • Geopathic stress • Nuclear radiations • Chronic injuries | <ul style="list-style-type: none"> • Viruses • Parasites and other germs | <ul style="list-style-type: none"> • Pollute water • Chlorinated water • Fluoridated water • Tobacco products • Pesticides • Food additives • Tar & Petroleum products | <ul style="list-style-type: none"> • Diet deficiency • toxins due to metabolism • intestinal toxicity • digestive impairment | <ul style="list-style-type: none"> • chronic stress • toxic negative emotions |

DISCUSSION

Normally some cells proliferate throughout life (labile cells), some have limited proliferation (stable cells), while others do not replicate (permanent cells).

On the other hand, cancerous cells lose control and regulation of replication and form an abnormal mass of tissue.

In a healthy body, the trillions of cells it's made of grow and divide, as the body needs them to function daily.

Healthy cells have a specific life cycle, reproducing and dying off in a way that is determined by the type of cell.

New cells take the place of old or damaged cells as they die. Cancer disrupts this process and leads to abnormal growth in cells. It's caused by changes or mutations in DNA. DNA exists in the individual genes of every cell. It has instructions that tell the cell what functions to perform and how to grow and divide. Mutations occur frequently in DNA, but usually cells correct these mistakes. When a mistake is not corrected, a cell can become cancerous.

Mutations can cause cells that should be replaced to survive instead of die, and new cells to form when they're not needed. These extra cells can divide

uncontrollably, causing growths called tumors to form.

Tumors can cause a variety of health problems, depending on where they grow in the body. But not all tumors are cancerous. Benign tumors are noncancerous and do not spread to nearby tissues. Sometimes, they can grow large and cause problems when they press against neighbouring organs and tissue.

Malignant tumors are cancerous and can invade other parts of the body.

Some cancer cells can also migrate through the bloodstream or lymphatic system to distant areas of the body. This process is called metastasis. Cancers that have metastasized are considered more advanced than those that have not. Metastatic cancers tend to be harder to treat and more fatal.

ROUTES OF METASTASIS

Cancers may spread to distant sites by following pathways:

1. Lymphatic spread
2. Haematogenous spread
3. Spread along body cavities and natural passages (Transcoelomic spread, along epithelium-lined surfaces, spread via cerebrospinal fluid, implantation).

LYMPHATIC SPREAD: In general, carcinomas metastasise by lymphatic route while sarcomas favour haematogenous route. However, some sarcomas may also spread by lymphatic pathway.

The involvement of lymph nodes by malignant cells may be of two forms:

- i) Lymphatic permeation the walls of lymphatic are readily invaded by cancer cells and may form a continuous growth in the lymphatic channels called lymphatic permeation.
- ii) Lymphatic emboli alternatively, the malignant cells may detach to form tumour emboli so as to be carried along the lymph to the next draining lymph node. The tumour emboli enter the lymph node at its convex surface and are lodged in the subcapsular sinus where they start growing. Later, of course, the whole lymph node may be replaced and enlarged by the metastatic tumour.

HEMATOGENOUS SPREAD:

- *Blood-borne metastasis is the common route for sarcomas but certain carcinomas also frequently metastasise by this mode, especially those of the lung, breast, thyroid, kidney, liver, prostate and ovary.*
- *The sites where blood-borne metastasis commonly occurs are: the liver, lungs, brain, bones, kidney and adrenals, all of which provide 'good soil' for the growth of*

'good seeds', i.e. seed-soil theory postulated by Ewing and Paget a century ago.

- *However, a few organs such as the spleen, heart, and skeletal muscle generally do not allow tumour metastasis to grow.*
- *Spleen is unfavourable site due to open sinusoidal pattern which does not permit tumour cells to stay there long enough to produce metastasis. In general, only a proportion of cancer cells are capable of clonal proliferation in the proper environment; others die without establishing a metastasis.*

CONCLUSION

- Carcinogen is a chemical or physical agent that can cause cancer. Mere exposure to carcinogen does not guarantee the onset of cancer. However, such exposure increases the risk of getting cancer. If such exposures were avoided, it would reduce the risk of cancer.
- With increased immunity and reduced mental tensions plays a crucial role in treating Cancer.
- *Hetu* is the prime factors for the causation of disease. That's why both *Acharyas Charak and*

Sushrut have advised to avoid the etiological factors and it is the primary step in the management of any disease.

- *Hetu* gives an idea to diagnose the disease and as well as some time clue to predict the forthcoming disease.
- for dealing with any problem, accurate diagnosis is very important. if the diagnosis is accurate, then there is better chance of taking right steps.

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