



Original Article

## UNDERSTANDING THE ETIOPATHOGENESIS OF CANCER IN AYURVEDA

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### Abstract

**Purpose** – The purpose of this paper is to understand the etiopathogenesis of Cancer in Ayurveda. It is based on understanding of *Hetu & Sthan Vikruthi* applied to different *Dosha* and *Dushya* as mentioned in *Shotha* (Swelling), *Granthi* (Cystic Swelling) and *Arbuda* (Malignant Tumour). Advantage of considering the *Gramya Aahara Sevana* (Unhealthy diet & life style) & *Vishesh Nidana* (Special Cause) mentioned in above three diseases (*Shotha*, *Granthi* and *Arbuda*) helps in conceptual knowledge of etiopathogenesis of Cancer. Even though an earlier research in Ayurveda relates Cancer with *Arbuda* (Malignant Tumour) but understanding of *Vikalpa Samprapti* needs the comprehensive approach of *Shotha* (Swelling), *Granthi* (Cystic Swelling) and *Arbuda* (Malignant Tumour). The pathological consequences are well explained in these diseases.

**Materials and Methods** - Classical Ayurvedic texts, Commentaries, Various Article, Previously conducted research studies thoroughly reviewed and analysed to frame the Understanding the etiopathogenesis of Cancer in Ayurveda.

**Conclusion** - Etiological factors mentioned in *Gramya Aahar Sevan* (Unhealthy diet & life style), *Shotha* (Swelling) and *Arbuda* (Malignant Tumour) topics shows Carcinogenic properties. Pathological changes of Cancer can be elaborately understood by studying *Vikalpa Samprapti* of *Shotha* (Swelling), *Granthi* (Cystic Swelling) and *Arbuda* (Malignant Tumour). One who understands these can prevent and treat the Cancer effectively.

**Key Words** – *Shotha* (Swelling), *Granthi* (Cyst), *Arbuda* (Malignant Tumour), Cancer, *Gramya Aahara*.

### INTRODUCTION

Cancer has now become a common disease which spreads throughout the blood stream in the human body<sup>2</sup>.

Cancer having much impact on the patient, his family and on society also. The anxiety and uncertainty of a cancer diagnosis can create extreme disruption in the life of almost any individual. A cancer diagnosis can create a threat to ones general sense of security and derliness in life. Although the vast majority

of cancers are treatable, many people retain deep-seated fears that any cancer represents pain, suffering and death.

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Holland (2002) noted that no disease has sustained as strong of a negative stigma as Cancer<sup>3</sup>.

There are many causative factors for Cancer but practically unable to decide the cause of Cancer, hence there is no causal treatment. In Ayurveda we can understand the *Nidana* (Cause) with the help of *Gramya Aahara* (Unhealthy diet & life style) and by *Vishesh Nidana* (Special causes) of *Shotha*, *Granthi* and *Arbuda*.

Commonly accepted basis of pathogenesis of Cancer is the damage to the genetic apparatus of the cell which can be considered as *Bijabhaga* (Genes) and *Bijabhaga Avayava Dushti* (Genetic Apparatus Defects).

By the *Vikalpa Samprapti* (Pathogenesis) of *Shotha* (Swelling), *Granthi* (Cystic Swelling) and *Arbuda* (Malignant Tumor) we can understand the pathogenesis of Cancer.

#### AIMS AND OBJECTIVES

To understand the etiopathogenesis of Cancer in Ayurveda based on *Hetu* (Cause) and *Sthan Vikruti* of different *Dosha* and *Dushya* mentioned in *Shotha*, *Granthi* and *Arbuda*.

To understand *Gramya Aahara Sevana* (Unhealthy diet & life style) and its impact on *Sharira*

To understand clinical features of cancer in Ayurveda.

#### DEFINITION

अर्बुदो अयम ग्रन्थितो महान भवति<sup>4</sup>

Compared to *Granthi* *Arbuda* is bigger in size.

ग्रन्थि संज्ञया ग्रन्थ्याकात्त्वम दर्शयति<sup>5</sup>

One which is having *Granthi* it is called as *Granthi*.

In Cha.Chi.12/87 as explained both *Granthi* and *Arbuda* are same, so we can consider both the definitions.

According to modern science Cancer is the condition of uncontrolled growth & spread of cells occurs in any part of body & involves surrounding tissues and metastasizes to distant sites.

Abnormal reproduction and differentiation of cells make change in normal process<sup>6</sup>.

#### ETIOLOGY/ NIDANA

It is accepted to distinguish three etiological causes of cancer and respectively three types of carcinogenesis:

1. Chemical carcinogenesis (chemical carcinogens—benzpyrene, asbestos and over 800 chemicals)
2. Physical carcinogenesis (physical carcinogens—ionizing radiation, ultraviolet radiation, etc.),
3. Biological carcinogenesis (biological carcinogens—viruses, bacteria, fungi).

There are Co-Carcinogens like Trauma, unhealthy diet, geography, some of the risk factors like Tobacco use, Alcohol use and lack of physical activity.

However, in clinical practice it is practically impossible to determine the etiological cause of cancer, and to prescribe the appropriate etiotropic cancer therapy in each case, so the causal cancer treatment does not exist<sup>7</sup>.

In Ayurveda if we go through the classics properly we get *Gramya Aahara* (Unhealthy diet & life style) as perfect *Nidana* (Cause) for Cancer along with *Vishesh Nidanas* (Special causes) of *Granthi* (Cystic Swelling) and *Arbuda* (Malignant Tumor).

There is need to understand the concept of *Gramya Aahara* (Unhealthy diet & life style). As in modern science explained the main etiological factors as Physical, Chemical and Biological carcinogens, the person who comes in contact with these carcinogens may or may not get the cancer. But even the persons who are not in contact with these are getting prone to cancer now a days, for that the main reason is unhealthy diet and unhealthy lifestyle which we can consider as Co Carcinogen. Charaka explained it very well under *Gramya Aahara*.

If clinicians understand the *Gramya Aahara* and *Nidana* (Cause) of *Shotha* (Swelling), *Granthi* (Cystic Swelling) by partial comparison with etiology of Cancer, one can prevent and treat the disease effectively.

**TABLE NO.1-NIDANA**  
*Shotha Nidana<sup>8</sup>+Gramya Aahara Sevana<sup>9</sup>+ Modern etiology<sup>10</sup>*

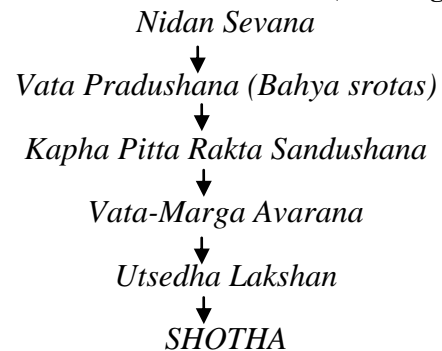
<b>Nidana</b>	<b>Causes</b>	<b>Carcinogens</b>
<i>Amaya</i>	Immune compromised disease	Biological carcinogen
<i>Gara Visha Sevana</i>	Urban life style	Chemical Carcinogen
<i>Svatantra Hetu like Kshara, Amladi</i>	Alkalis	Chemical Carcinogen
<i>Viruddhi-Dushta Aahara Sevan</i>	Incompatible food	Co carcinogen
<i>Krusha Abala</i>	Malnutrition	Co carcinogen
<i>Acheta</i>	Lack of Physical activity	Co carcinogen
<i>Marmopaghata</i>	Trauma	Co carcinogen
<i>Mithyopachara</i>	Iatrogenic factors	Co carcinogen
<i>Viruddha Aahara sevana</i>	Collection of toxins	Co carcinogen
<i>Bija dushti and Bija Bhaga Avayava dushti</i>	Genetic factors	Co carcinogen
<i>Bhaya, Krodha, Shoka</i>	Mental Stress	Co Carcinogen

## **PATHOGENESIS**

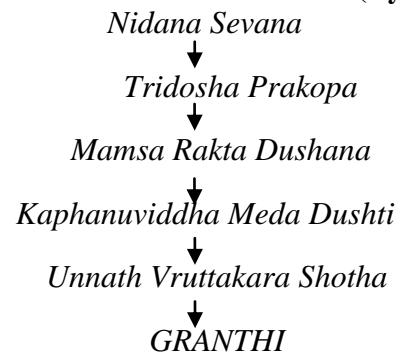
We believe that for all kinds of cancer, regardless of a histological type, there is existence of a common pathophysiological process of malignant tumours in the organism. Based on the analysis of the numerous scientific data and the results of research it can be claimed that in the development of malignant tumours, along with damage to the genetic apparatus of the cell, the suppression of anti-tumour immunity takes place and is required. It should be noted that the suppression of anti-tumour immunity is one of the natural physiological reactions of the organism, and when this reaction becomes pathophysiological condition of an organism—it results in development of Cancer.

Thus, under physiological conditions, the temporary local suppression of antitumor activity of the immune system is one of the links in the natural reparative process, which is always observed when local tissues of the organism are damaged as a result of any chemical, physical or biological impacts. The physiological meaning of the temporary local suppression of anti-tumour immunity is to ensure the successful repair of tissue damaged. The point is that the proliferating tissue cells and tumour cells are similar in structure and properties, so the active anti-tumour immunity would block the repair processes of the tissue damaged through elimination of proliferating cells<sup>11</sup>. According to Ayurveda the *Samprapti* (Pathogenesis) takes place in 3 stages. Here there is involvement of *Shotha*, *Granthi* and *Arbuda* all the three.

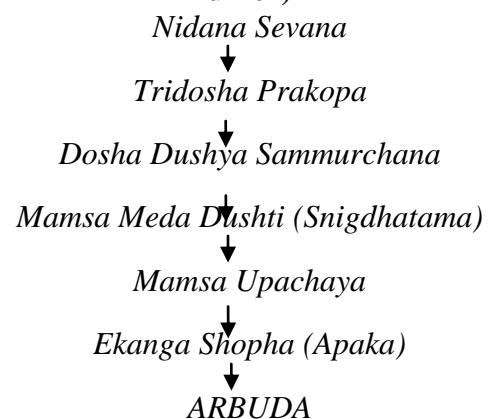
### **FIRST STAGE – SHOTHA (Swelling)<sup>12</sup>**



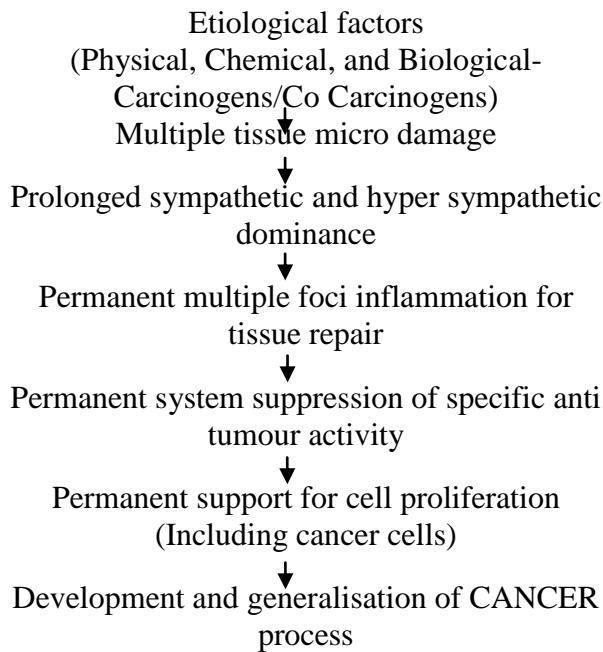
### **SECOND STAGE – GRANTHI (Cyst)<sup>13</sup>**



### **THIRD STAGE – ARBUDA (Malignant Tumor)<sup>14</sup>**

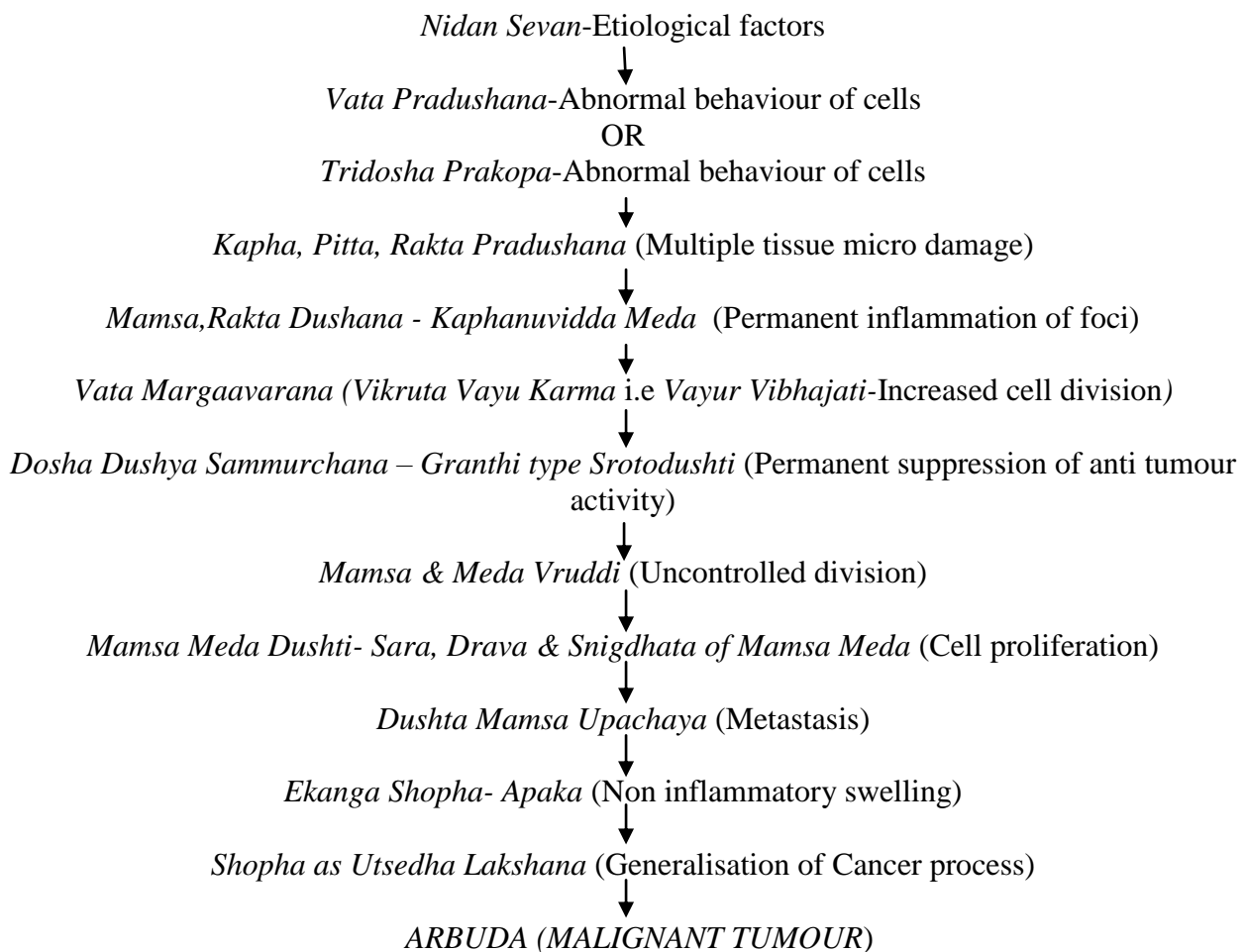


According to modern science the pathogenesis is as follows<sup>15</sup>



By the above flow chart come to know the pathogenesis of Cancer in Modern science and in Ayurveda separately. By partial comparison of both the *Samprapti* (Pathogenesis) of *Shotha* (Swelling), *Granthi* (Cystic Swelling), *Arbuda* (Malignant Tumor) and pathogenesis of Cancer together one can better understand the concept of Cancer in Ayurveda.

#### Flow chart of comparison of *Samprapti* (Pathogenesis) in Ayurveda and Modern Pathogenesis



**TABLE NO.2**

**PATHOLOGICAL MACRO & MICRO CONSEQUENCES OF CANCER**

By the *Gramya Aahara Sevana*(Unhealthy diet & Life style) the *Shariragata Vikaras*(Bad Impacts on Body) will be seen. These *Vikaras*(Bad impacts) we can correlate with the pathological consequences of Cancer which are explained in Modern Science.

<b>SHARIRAGAT VIKAR BY GRAMYAAHAR<sup>16</sup></b>	<b>PATHOLOGICAL CONSEQUENCES</b>
1. <i>Dhatu Shithilata</i>	Increased mitotic activity
2. <i>Sandhi Moksha</i>	Uncontrolled division of cells
3. <i>Shukra Apravartana</i>	Damage to DNA & RNA
4. <i>Rakta Vidaha</i>	Homeostasis will disturb
5. <i>Gatra Glani &amp; Gatra Sidana</i>	Malnutrition
6. Absence of <i>Majja</i> in <i>Asthi &amp; Sandhi</i>	Physiological marrow replaced by metastasis.
7. <i>Sharir</i> become <i>Adhistan</i> of many <i>Rogas</i>	Prone for multiple infections.
8. <i>Oja Kshaya</i>	Immune compromised
9. <i>Nirayu</i>	Death occurs because of mechanical & destructive effects.

**LAKSHANAS/CLINICAL FEATURES**

Acc to Su.Ni.11/13,14

1. *Unnath Vruttakara Shotha* – Circular Swelling
2. *Kathina* – Hard
3. *Sthira* – Immovable, Fixed
4. *Anartha* – Painless
5. *Mahan* – Bigger in size
6. *Analpamula* – Malignant tumours are ill defined and involvement of surrounding structures.
7. *Chiravruddhi* – Metastasis
8. *Apaka* – Non Inflammatory

By seeing above *Lakshans*/Clinical features one can understand that the *Lakshanas* which are explained by Sushruta for *Arbuda*(Malignant Tumor) are not different from the Clinical features of Malignant Tumour. These *Lakshans* manifestation can be understand by the *Vikalpa Samprapti* of above flow Chart.

**BENEFITS**

So if we understand the importance of *Gramya Aahara* (Unhealthy diet & life style) and its *Prabhava* (Impacts) on *Sharira* (Body) we can able to educate the patient about the healthy

life style and to avoid the carcinogens and co-carcinogens.

As explained in Harrison's principles of medicine i.e. improved understanding of carcinogenesis and early detection (also known as cancer control) to expand beyond the identification and avoidance of carcinogens. Prevention concerns the identification and manipulation of the biologic, environmental, and genetic factors in causal pathway of cancer. Public education on the avoidance of identified risk factors for cancer and encouraging healthy habits contributes to cancer prevention and control. The clinician is a powerful messenger in this process. The patient provides encounter provides an opportunity to teach patients about the hazards of smoking, the features of healthy lifestyle, use of proven cancer screening methods and sun avoidance<sup>17</sup>.

**MATERIALS AND METHODS**

Classical Ayurvedic texts, Commentaries, Various Article, Previously conducted research studies thoroughly reviewed and analysed to frame the Understanding of etiopathogenesis of Cancer in Ayurveda.



## DISCUSSION

In previous researches on Cancer in Ayurveda there are very less explanations about considering the *Gramya Aahara* (Unhealthy diet & life style) as *Nidana* (Cause) for Cancer. Almost all researches has explained only the *Vishesha Nidana* (Special Causes) which has been explained for *Mamsa Pradoshaja Vikaras* but considering the *Gramya Aahara* (Unhealthy diet & life style) as *Nidana* (Cause) gives the signal that unhealthy diet and life style are the major cause of Cancer which is explained in Modern science as Co Carcinogen and presently modern science saying that Modern life style and unhealthy diet is the main cause.

In *Gramya Aahara* we can find all the 3 types of carcinogens (Biological, Physical, Chemical) along with the Co carcinogens. Hence by understanding the *Gramya Aahara Sevana* one can able to educate the society and can create awareness in society about the harms of *Gramya Aahara Sevana* and its impact on body, so that one can advise the healthy life style and diet.

*Vikara Vighata Bhavaabhava* which is explained in *Charaka Nidana Sthana* is the main concept in causation of the Cancer in different individual. Because the persons who consumes the *Gramya Aahara* every one will not get the Cancer this is depend on the Immunity power against the pathogenesis which can be understand through *Vikara Vighat Bhavaabhava* concept which explains that the *Vyadhi Utpatti* takes place when *Nidana*, *Dosha* and *Dushya* are favourable strongly to each other.

Even though an earlier research in Ayurveda relates the Cancer with *Arbuda* (Malignant tumor) but understanding of *Vikalpa Samprapti* needs the comprehensive approach of *Shotha*(Swelling), *Granthi* (Cystic Swelling) and *Arbuda* (Malignant Tumor).

By seeing the *Samprapti* one can understand that main causative *Dosha* is not only Kapha

but the *Vata Dosha*. i.e *Vayur Vibhajati* – *Vata* is the prime cause for cell division. In *Vikrut Avasta Vata Dosha* along with *Dushita Mamsa* and *Meda* (*Snigdhatama*) leads to uncontrolled division of cells. *Dushta Meda Dhatu Upachaya* leads to Metastasis. We get the *Lakshanas* as *Utsedha Shotha* and all the *Lakshanas* are almost comparable with Malignant Tumor features.

## CONCLUSION

Ayurveda aims at “*Swasthasya Swastha Rakshanam, Aturasya Vikara Prashamanam*”. The main aim is to restore health and maintain individuals well being. So for *Swastha Rakshana* first one need to understand which will cause the *Aswasthyata*. Avoiding *Gramya Aahara* (Unhealthy diet & life style) before occurrence of disease prevents the disease and after occurrence of disease prevents the complications of cancer. For better understanding of pathogenesis of Cancer in Ayurveda one has to consider the *Samprapti* of *Shotha* (Swelling), *Granthi* (Cystic Swelling) and *Arbuda* (Malignant Tumor) which gives the detail explanation about *Vikalpa Samprapti* of *Arbuda* in stage wise. By understanding the *Arbuda Lakshanas* through Malignant Tumour feature one can treat it as per the treatment principles of *Shotha*, *Granthi* and *Arbuda* on the basis of severity of the disease. In this regard understanding of etiopathogenesis of Cancer in Ayurveda helps to prevent the Cancer as earliest and to treat effectively.

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