

**TO STUDY THE ROLE OF
AAHAR HETU (DIETARY FACTORS) AND
ANUVANSHIKTA (HEREDITY)
AS CAUSATIVE FACTORS IN DUSHTASTANARBUD
(BREAST CANCER)**

**A thesis submitted to
Tilak Maharashtra Vidyapeeth, Pune
For the Degree of Doctor of Philosophy (Ph.D.)**

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Under the Board of Studies

Ayurved Faculty

Submitted by

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April 2014

DECLARATION

I hereby declare that the thesis entitled “**To Study The Role of Aahar Hetu and Anuvanshikta as causative factors in Dushta Stanarbud (Breast Cancer)**” completed & written by me has not previously been formed as the basis for the award of any Degree or other similar title upon me of this or any other Vidyapeeth or examining body.

Research Student

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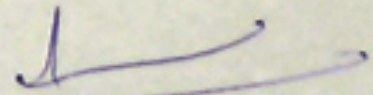
Certificate

This is to certify that the thesis entitled,

“To Study the role of Aahar Hetu (Dietary Factors) and Anuvanshikta (Heredity) as causative factors in Dushta Stanarbuda (Breast Cancer)” which is being submitted herewith for the award of the Degree of Vidyavachaspati (Ph.D.) in Ayurved of Tilak Maharashtra Vidyapeeth , Pune is the result of original research work completed by **Vd. Mrs. Swapna Jaideep Kulkarni** under my supervision and guidance. To the best of my knowledge and belief the work incorporated in the thesis has not formed the basis for the award of any Degree or similar title of this or any other University or examining body.

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Research Scholar

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List of Abbreviations

Texts

च.सं	Charak Samhita	(चरक संहिता)
सु.स	Sushrut Samhita	(सुश्रुत संहिता)
अ.ह	Ashtang Hrudaya	(अष्टांग हृदय)
अ.सं	Ashtang Sangraha	(अष्टांग संग्रह)
का.सं	Kashyap Samhita	(काश्यप संहिता)
भा.प्र	Bhav Prakash	(भाव प्रकाश)
यो.र	Yoga Ratnakar	(योग रत्नाकर)
मा.नि	Madhav Nidan	(माधव निदान)
रा.नि	Raj Nighantu	(राज निघण्टु)
कै.नि	Kaiyyadev Nighantu	(कैय्यदेव निघण्टु)
ध.नि	Dhanvantari Nighantu	(धन्वन्तरी निघण्टु)

Sections

सू.स्था	Su.	Sutrasthana	(सूत्र स्थान)
नि.स्था	Ni	Nidansthana	(निदान स्थान)
वि.स्था	Vi	Vimansthana	(विमानस्थान)
शा.स्था	Sha	Sharirsthana	(शारीर स्थान)
चि.स्था	Chi.	Chikitsa Sthana	(चिकित्सा स्थान)

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INTRODUCTION

Cancer, known medically as malignant neoplasia, is a broad group of diseases involving unregulated cell growth. In cancer, cells divide and grow uncontrollably, forming malignant tumors, which may invade nearby parts of the body. The cancer may also spread to more distant parts of the body through the lymphatic system or bloodstream. Not all tumors are cancerous; benign tumors do not invade neighboring tissues and do not spread throughout the body. The causes of cancer are diverse, complex, and only partially understood. Many things are known to increase the risk of cancer, including tobacco use, dietary factors, certain infections, exposure to radiation, lack of physical activity, obesity, and environmental pollutants¹. These factors can directly damage genes or combine with existing genetic faults within cells to cause cancerous mutations². Approximately 5–10% of cancers can be traced directly to inherited genetic defects³. Many cancers could be prevented by not smoking, eating more vegetables, fruits and whole grains, eating less meat and refined carbohydrates, maintaining a healthy weight, exercising, minimizing sunlight exposure, and being vaccinated against some infectious diseases.^{1,4}

Cancer Global Scenario

Amongst the various types of cancers breast cancer is now the most common cancer in the world. According to GLOBOCAN an online database of IARC Global burden of cancer rises to 14.1 million new cases and 8.2 million cancer deaths in 2012. The most commonly diagnosed cancers worldwide - lung (1.8 million, 13.0% of the total), breast (1.7 million, 11.9%), and colorectum (1.4 million, 9.7%). The most common causes of cancer death - lung (1.6 million, 19.4% of the total), liver (0.8 million, 9.1%), and stomach (0.7 million, 8.8%).

Breast Cancer Global Scenario

In 2012, 1.7 million women were diagnosed with breast cancer and there were 6.3 million women alive who had been diagnosed with breast cancer in the previous five years. It now represents one in four of all cancers in women. Breast cancer is also

a leading cause of cancer death in the developing countries of the world, partly because a shift in lifestyles is causing an increase in incidence, and partly because clinical advances to combat the disease are not reaching women living in these regions⁵ Generally, worldwide trends show that in developing countries going through rapid social and economic changes, the shift towards lifestyles changes is leading to a rising burden of cancers associated with reproductive, dietary, and hormonal risk factors.

Cancer Prevalance in India

Considering the prevalence of cancer in India, Cancer has become one of the ten leading causes of death in India. It is estimated that there are nearly 2 to 2.5 million cancer cases at any given point of time in India. Over 7 to 9 lakh new cases and 3 lakh deaths occur annually in India due to cancer. Breast cancer is the most common diagnosed malignancy in India, it ranks second to cervical cancer. An increasing trend in incidence is reported from various registries of national cancer registry project and now India is a country with largest estimated number of breast cancer deaths worldwide.

Research on Risk Factors in Breast Cancer

According to modern medicine extensive research is being done to evaluate the causative factors in breast cancer. Probable factors seen in the causation have been termed as risk factors. Of these some pose a high risk, some are probable while some are yet to be evaluated. Family history, personal history, genetic mutations have been evaluated as high risk factors while lifestyle factors are being taken into consideration of their role in causing breast cancer. The traditional view is that hormones cause breast cancer, except in rare cases where women in high-risk families inherit mutations in genes such as *BRCA1* or *BRCA2*. Recent evidence shows that this view is too narrow. A broader view of breast cancer causation is needed that takes environmental factors into account. Environmental factors are not going to be the prime factors for breast cancer. On the contrary, these exposures usually demonstrate weak effects, similar to most known risk factors for breast cancer. Most probably, environmental factors act in aggregate, rather than as independent exposures, in

combination with hormonal factors at many different periods of a woman's life over long periods of time.⁶

Diet as a Risk factor in Breast Cancer –

A substantial amount of research⁷⁻¹¹ has explored the influence of diet, a modifiable risk factor on breast cancer risk and it is estimated that approximately one-third of cases could be prevented by dietary modification. Research has been done on specific dietary factors like fish intake and Cancer risk¹² sweet consumption and cancer risk. A direct association between breast cancer risk and consumption of sweet foods with high glycemic index and load, which increase insulin and insulin growth factors has been concluded in the study¹³ Research studies done based on dietary habits and patterns according to region show some dietary pattern may be associated with breast cancer risk¹⁴. Research suggests the possibility that a fat rich diet may produce dual steroidal disorders of ovarian dysfunction and hypercorticism which in turn will open the way to breast carcinogenesis. A study based on Hormonal cancers in females stated that weight gain in adult life may pose a risk for breast, endometrium & ovarian cancer.¹⁵ Breast cancer is likely caused by the interaction of exposure to environmental carcinogens at an early age, resulting in initiation of neoplastic transformation and growth factors that determine the likelihood of progression to clinical disease. The environmental carcinogens are numerous (each contributing relatively little to overall risk) and probably interact with genetic "host susceptibility". Dietary fat, fibre, and perhaps other nutrients, also contribute to blood oestrogen levels. Other hormones, especially insulin and insulin-like growth factors may also contribute to the increased risk of breast cancer. The reduction of breast cancer incidence and mortality will depend, primarily, on modification of women's lifestyles which would move them from higher to lower estrogen characteristics.¹⁶ Combination of BRCA mutations & dietary pattern which include vegetables and fruit diversity may be associated with a reduced risk of breast cancer.¹⁷ These studies reveal dietary patterns and the probable risk factor in causation of breast cancer. It also signifies the possible interaction between genes and lifestyle factor like diet in occurrence of breast cancer.

Heredity as a risk factor in Breast Cancer:

About 5% to 10% of breast cancer cases are thought to be hereditary, meaning that they result directly from gene defects (called *mutations*) inherited from a parent. The most common cause of hereditary breast cancer is an inherited mutation in the *BRCA1* and *BRCA2* genes. In normal cells, these genes help prevent cancer by making proteins that help keep the cells from growing abnormally. If a mutated copy of either gene has been inherited from a parent, there is a high risk of developing breast cancer during lifetime. Although in some families with *BRCA1* mutations the lifetime risk of breast cancer is as high as 80%, on average this risk seems to be in the range of 55 to 65%. For *BRCA2* mutations the risk is lower, around 45%. Breast cancers linked to these mutations occur more often in younger women and more often affect both breasts than cancers not linked to these mutations. Women with these inherited mutations also have an increased risk for developing other cancers, particularly ovarian cancer.¹⁸

This is modern perspective of cancer and its risk factors in the causation of breast cancer.

Cancer according to Ayurved

Though Cancer has not been described in Ayurveda there are other diseases like Vrana, Vidradhi, Granthi, Visarpa etc. which bear simile to it. ‘Arbuda’ is one such disease. The characteristics of this disease show resemblance to cancer.¹⁹

Pathogenesis of Arbud

Vata, Pitta Kapha dosha having got aggravated in any part of the body and afflicting the Mansa dhatu, produce a circular, fixed, slightly painful, big, broad based slow growing non-suppurating and dense elevation (swelling) of mansa. The same is called as “arbuda” by the scholars. Aggrevation of these doshas and vitiation of rasa-rakta-mansa-meda dhatus in stana can lead to causation of dushta stanarbuda.

The imbalance of doshas can be due to various hetu (causative factors) for instance- lifestyle factors like aahar (dietary factors) - Vihar (routine of the person), Agantuja (due to external factors like trauma) or Manasika (psychological

disturbance).One causative factor taken into consideration is Beejadosha i.e abnormality due to heredity.

Aahar as causative factor in Arbud

Everything in this universe is Panchbhautika i.e it possesses properties of five basic elements in dissimilar proportions according to the consistency required .Body also comprises of these five elements, so also the food. In this panchbhutika shareer, panchabhautika aahar taken is digested by the pachakagni (gastric fire). The aahar thus digested increases the dhatus which have similar properties as to that of the dravya. It comprises of of six tastes viz. Madhur(sweet),Amla(sour),Lavan(salty), Katu(Hot & spicy),Tikta(bitter)and Kashaya(astringent).It is also catagorised as Laghu (light to digest) and Guru(heavy to digest).²⁰

These rasas if taken in proper proportions keep doshas in equilibrium but their ati yog or excessive intake causes aggrevation of doshas and vitiation of dhatus. Dietary habits like overeating, irregular timings of meals, incompatible diet cause derangement of Agni (gastric fire) leading to disease.

Aahar with respect to Arbud

Dietary factors aggrevating the above mentioned factors responsible in pathogenesis pose as risk factors for Arbud. The sthanasanshraya or occurrence of arbud is Stana, hence diet vitiating rasa-rakta dhatu and stanya-upadhatu of rasa is also equally important.

Anuvanshikta

Anuvanshikta can be termed as the traits which descend from one generation to another. In other words Anuvanshikta denotes Heredity. In the scriptures inbreeding or progeny from marriage in close relations is prohibited. This indicates that the role of heredity was prevalent in those times also. Acharya Charak has also advised mating a female from a different lineage than that of the male. Ideal beeja i.e- shukra-artav, healthy uterus, ideal atma-mana and proper diet are the factors necessary for healthy progeny. If the beeja or Shukra- Artav is vitiated it can cause hereditary or congenital disorders called as beejadosha. Sahajroga denotes disorders

caused due to beejadosha i.e vitiation of Shukra and /or Artav. Kushta (leprosy), Prameha (diabetes), Medoroga (obesity), Arsha (piles) etc. can be caused due to beejadosha. These types of diseases have been termed as kulaj by acharya Charak. While describing Prameha, it is mentioned that kulaj diseases are asadhya (incurable) stating the gravity of the cause.

Study of Role of Aahar Hetu and Anuvanshikta as causative factors in Dushta Stanarbud (Breast Cancer)

In our Cancer Research Center, we documented dietary habits and Anuvanshikata (Heredity of any type of cancer) of 563 Breast cancer patients. Six Rasas – Madhura, Amla, Lavana, Katu, Tikta, Kashaya, Ushna, Sheeta Veerya, Guru, Laghu, Snigdha, Ruksha guna, Paryusheet -anna (Stale food), Viruddha ahara (incompatible food), Bakery products, Fermented food, Vegetarian and Non vegetarian food, Atyashana, Adhyashana were the variables studied.

Among these variables, Madhurrasa (85.25%), Amla (77.9%) – Lavana (51.15%) – Katu Rasa (90.4%), Virudhhanna (46.18%), Paryusheetanna (53.10%), Bakery products (29.30%) were prominently observed factors and thus considered as causative factors of Breast Cancer.

Heredity of any type of cancer in 1st, 2nd and 3rd degree relatives in maternal and paternal side was considered as positive heredity (Anuvanshikata). In our documented data of 563 Breast cancer patients, positive heredity of cancer was observed in 38 % patients, which is a considerably notable figure and thus considered as one of the major causative factors of Breast cancer.

Our study of 563 cancer patients also showed that the above mentioned dietary causative factors were more common in patients having positive family history.

Table 1. Dietary Causative factors noted in Cancer Research Project

No. of Patients	Madhur Rasa	Amla Rasa	Lavana Rasa	Katu Rasa	Paryusheetanna	Bakery product	Virudhhanna
+ve Family History (215 pts)	199 (93%)	159 (74%)	113 (53%)	209 (97%)	93 (43%)	76 (35%)	92 (43%)

-ve							
Family History (348 pts)	281 (81%)	280 (80%)	175 (50%)	300 (86%)	206 (59%)	89 (26%)	168 (48%)
Total (563 pts)	480 (85%)	439 (78%)	288 (51%)	509 (90%)	299 (53%)	165 (29%)	260 (46%)

Thus the study was undertaken to assess the role of Aahara hetu and Anuvanshikata together as causative factors of progression of Dushta Stanarbuda (Breast Cancer).

The research question was whether these causative factors individual or in combination contribute to the progression of the disease or not. Progression of Breast cancer is assessed by grade, nodal metastasis and distal metastasis.

Hypothesis

Aahara hetu (Dietary factors) and Anuvanshikata (Heredity) in combination contribute to the progression of Dushta Stanarbuda (Breast Cancer).

AIMS AND OBJECTIVES

Aims :

To study the role of Aahar Hetu (Dietary Factors) and Anuvanshikta (Heredity) as causative factors in Dushta Stanarbud(Breast Cancer)

Objectives:

- To compare the role of Aahar Hetu and Anuvanshikta Hetu as individual causative factors in progression(grade) of Dushta Stanarbuda(Breast Cancer)
- To compare the role of individual Aahar Hetu and Aahar &Anuvanshikta in combination as causative factors in progression (grade) of Dushta Stanarbuda.
- To compare the role of individual Anuvanshikta Hetu and Aahar & Anuvanshikta in combination as causative factors in progression (grade) of Dushta Stanarbuda.

LITERATURE REVIEW STANA, STANYA

Stana Sharir Rachana and Kriya

❖ **Synonyms for Stana**

According to Amarkosha, Kuchauo is the synonym of Stana. Stana, Urasija, Vakshoj, Payodhara, Cucha are mentioned in Rajnighantu.²¹

Stanagra (Nipple of the breast) is also referred as Chucukam or Kuchagra. Stanamukh, Vrutta, Shikha are also mentioned as synonyms for stanagra (nipple).²²

❖ **Stana Sharir²³**

Stana also called as payodhara is one of the 56 pratyangas. Though Stana are formed in both males and females its functions differ. In females after attaining puberty the stana attain fullness while in males it remains in rudimentary form. In garbhini and sootika (pregnancy and lactation) it is filled with stanya (breast milk).

❖ **Stana Sampat**

Stana should not be too high, too small or too big. It should not be sagging. Nipple should be well formed by which the infant is able to suckle breast milk with ease.²⁴

❖ **Stana Nirmiti(formation) – Matruj Avayava**

❖ **Sthana – Urah(Chest)²⁵**

❖ **Stana Vishishtata (Characteristic feature of Stana(Breasts))**

When a female attains puberty Stana enlarge and during pregnancy and lactation period they are filled with breast milk. The stana(breasts) of a male do not undergo any change in their lifetime.²⁶

❖ **Srotasa –**

Bahirmukha Srotasa. In Males there are nine bahirmukha srotasas while in females three more have been described. Two in the stana and one in the yonimarga 'Rajovaha srotasa'^{27,28,29}

Acharya Sushrut has mentioned Stana as moolasthan of Shukravaha srotasa³⁰.

-
- ❖ **Peshi –**
Overall there are 500 peshi (muscles) in the body. In females there are 20 more. 5 peshi in each stana. These peshi develop during puberty.³¹
 - ❖ **Marma**
Total of 9 marmas reside in the ura (Chest region). Hridaya, Stanamula, stanarohit, Apalapa and Apastambha³²
 - **Stanamula** - Kalantara pranahara (gradual deterioration) sira marma , situated two fingers below the stana on either side. Injury to this marma causes kasa (cough) and shwasa(dyspnoea) resulting in death.³²
 - **Stanarohita** –Kalantara pranahara mansa marma , situated at both the breasts , two fingers above the nipple or stanachuchuka.Injury to this marma causes lohitaapurna koshtha(congestion in the lungs) , Kasa(cough) shwasa(dyspnoea) and gradual deterioration resulting in death.³²
 - **Apastambha**- Kalantar pranahara sira marma, situated in the thorax bilaterally. Injury to this marma causes vatapurnakoshthata (pneumothorax), kasa(cough) and shwasa(dyspnoea) and gradual deterioration resulting in death.³²
 - ❖ **Dhamani** – Twenty-four dhamani originate from the nabhi. 10 dhamani nourish the upper part of the body. These 10 dhamani after reaching the heart subdivide into three branches thus forming 30. Of these 30, 2 Dhamani reside in the breast to secrete breast milk.³³
 - ❖ **Sira** – There are forty sira in the thorax & out of these following fourteen sira should be avoided – two in the pericardium, two in each Stanamula, eight on the sides of Stanrohita, Apalap & Apastambha.³⁴

Stana roga

In childhood the dhamanis residing in the breast are very constricted due to which vitiated doshas cannot penetrate to cause imbalance. In childbearing age (pregnancy or lactation period) these dhamanis enlarge thus can be vitiated and cause stana roga(breast disease).³⁵

Samprapti of Stana Vidradhi Roga:

Vitiating of Doshas cause dushti in the stana (breast) of a lactating or non-lactating female, vitiate rakta and mansa dhatu thus cause 'Stana-Roga(Vidradhi)'.³⁶

Types : Vata, Pitta, Kapha, Sannipatika, Aagantuja

Kriya Sharir – Physiology

Stanya

❖ Stanyashaya

Organ where stanya(breast milk) gets collected and is secreted through the stanachuchuka

❖ **Nirmitti(formation)** – Matruj Avayava

❖ **Sthana** – Urah(Chest)

❖ **Dosha** – Kapha

❖ **Dhatu** – Rasa

❖ **Upadhatu** – Stanya

❖ Definition of Stanya–

Stanya – that which is secreted through Stana.

Stanya is one of upadhatu of Rasa.³⁷

❖ Lakshan (Properties)-

The cream part of Rasa formed from the digestion of food, which is madhur (sweet) gets accumulated in the stana and termed as 'Stanya'. Just as Shukra (semen) is present in the whole body but gets secreted by the thought or sight of a beautiful woman, in the same way stanya is formed from aahar rasa in a female but is secreted by the touch, sight or thought of child.³⁸

✓ Pandur(White)

✓ Madhur(sweet)

✓ Nirdosha(Without any imperfections)

✓ Sheeta (cool)

✓ Snigdha (unctuous)

✓ Dissolves in water

✓ Avivarna(clear)³⁹

❖ **Karya (Functions) –**

Nourishment of the organ stana.⁴⁰

Nourishment of the infant

❖ **Causes of Dysfunction :**⁴¹

Dietary causes:

- Excessive intake of Lavan(Salt), Katu(hot and spicy), Kshara(alkali)
- Abhishyandi(Diet aggravating Kapha dosha)Praklinna bhojana (Food which is decomposed)
- Excessive intake of Paramanna(kheer or various sweets prepared in oil or ghee), Guda(jaggery),Mandak(partially formed curds), Dadhi(curds), ,intake of Mansa(chicken, pork, fish etc)
- Excessive intake of Madya (Alcohol)
- Asatmya bhojan (food which is unaccustomed to the body)
- Vishamashana(food taken at irregular time and in irregular proportion)
- Viruddhashana(incompatible food)
- Atyashana (overeating)

Habitual Causes:

- Withholding or forcefully eliminating natural urges
- Daytime sleep immediately after having meals
- Keeping awake till late night
- Over exertion

External causes:

- Due to abhigata (accident due to physical trauma)
- Chronic disease
- Emaciation

Psychological causes:

- Mental irritation (Sudden mental shock or stress)
- Chinta (over-anxiety or worry)
- Krodha (Anger)

Samprapti of Stanya Dushti :

Due to improper diet or mental stress

Dosha Dushti (vitiation of dosha)

Sanyavah Sira Dushti (vitiation of Sanyavaha sira)

Sanya Dushti (vitiation of Breast milk)

Stana Keelaka :⁴²

If lactating mother eats foreign body with food, it does not get digested in pachyamanavashtha and pakavashtha. Undigested foreign body get converted in kleda, circulates with Rasa dhatu and Vata dosha and reaches stanyavaha sira (the mammary gland). This causes obstruction of srotasa and acute disease of breast. (Ka.su.19)

Stana Keelaka Roopa(signs & symptoms):⁴³

Signs :Stiffness and secretion in breasts, Veinulas, Inflammation, Pain, Tenderness

Symptoms :Indigestion, Palpitation, Giddiness, Body ache, Anorexia, Joint pain, Headache, Redness of eyes or Sneezing, Nausea due to kaph, Fever,Excessive thirst, Loose motions, Obstruction of urine and Burning sensation of breasts.

Clever physician named it as ‘stan vidradhi’ (mammary abscess) as it causes obstruction in body as nail.

Stanakeelaka according to Dosha dominance –⁴⁴

Vata Dominance - the abscess increases in size.

Pitta Dominance –accelerates inflammation and suppuration of Stanakeelaka (Mammary abscess) at an early stage.

Kapha Dominance –Slows process of pathology causing a chronic abscess.

Treatment of Stanakilaka :-⁴⁵

1. Ghruta paana (Internal Oleation with clarified butter). Due to this the tracts often becomes smooth internally thereby facilitating easy removal of the stankilak. Regular expulsion of breast milk is advised by proper massaging.
2. Sheetaseka (Application of cold compress)
3. Pralepa (external application of medications over the breast)
4. Virechana (Purgation treatment with medication)
5. Pathya Bhojana (dietary regimen) to keep a check over the doshas.

With the help of this treatment if the abscess is in primary stage then it gets healed or else it has to be treated with Incision and drainage.

LITERATURE REVIEW OF STANA (BREASTS) FROM MODERN MEDICAL SCIENCE

Mammary Gland (Breasts)

Anatomy & Physiology ⁶⁷

The Breasts is found in both sexes, but it is rudimentary in the male. It is well developed in the female after puberty. The breast is a modified sweat gland. It forms an important accessory organ of the female reproductive system, & provides nutrition to the new born in the form of milk.

Situation – The breasts lies in the superficial fascia of the pectoral region. A small extension called the axillary tail pierces the deep fascia & lies in the axilla.

Extent – 1) Vertically it extends from the second to the sixth rib.

2) Horizontally it extends from the lateral border of the sternum to the mid axillary line.

Development - 1. Partly from mesoderm - blood vessels and connective tissue
2. Partly from ectoderm - cellular elements

1. The breasts develop from an ectodermal thickening called the mammary ridge or milk line. This ridge extends from axilla to the groin. It appears during the 4th week of intrauterine life, but in humans it disappears over most of its extent persisting only in the pectoral region. The gland is ectodermal and the stroma is mesodermal in origin.
2. The persisting part of the mammary ridge is inverted into a mammary pit. Secondary buds grow down from the floor of the pit. These buds divide and subdivide to form lobes of the gland. The entire system is first solid, but later canalized. At birth or later the nipple is everted at the site of the original pit.
3. Growth of mammary glands, at puberty, is caused by estrogens. Apart from oestrogens, development of secretory alveoli is stimulated by progesterone and by lactogenic hormone of the hypophysis cerebri.

Changes seen in the Breast at various stages of Life

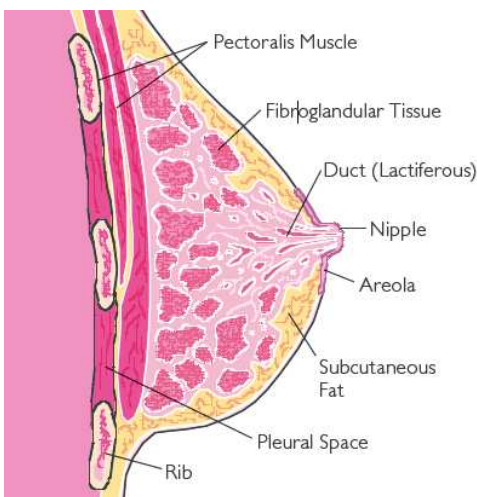
Before puberty -Are of small size, but enlarge as the generative organs become more completely developed.

During Pregnancy - Increase during pregnancy and especially after delivery

Old Age - Become atrophied . Much of the glandular and ductal tissue is replaced with fatty tissue and breasts become less dense. Ligaments also lose their elasticity when women age, causing the breasts to sag.

Structures of the Breast :- The structure of the breast may be conveniently studied by dividing into the skin, the parenchyma which consists of glandular tissue & the stroma which comprises of fibrous tissue and fatty tissue.

Figure 1. Structure of Breast



A) The Skin – It covers the gland & presents the following features.

1) Mammary Papilla or Nipple (*papilla mammæ*) A Conical projection called the Nipple is present just below the centre of the breast at the level of the fourth intercostal space. The nipple is pierced by 15 to 20 lactiferous ducts. It contains circular & longitudinal smooth muscle fibres which can

make the nipple stiff or flatten it; respectively. It has a few modified sweat & sebaceous glands. It is rich in its nerve supply & has many sensory end organs at the termination of the nerve fibres.

2) Areola - The skin surrounding the base of the nipple is pigmented & forms a circular area called the Areola. This region is rich in modified sebaceous glands, particularly at its outer margin. These become enlarged during pregnancy & lactation to form raised tubercles. Oily secretions of these glands lubricate the nipple & areola & prevent them from cracking during lactation. Apart from sebaceous glands, the areola also contains some sweat glands & accessory mammary glands. The skin of the areola & nipple is devoid of hair, & there is no fat subjacent to it.

B) The Parenchyma – It is made up of glandular tissue which is of a pale reddish color firm in texture and secretes milk. The gland consists of 15 to 20 lobes; they are termed the **tubuli lactiferi**. Each lobe is a cluster of alveoli, and is drained by lactiferous duct. The lactiferous duct converge at the nipple and open on it. Near its termination each duct has a dilatation called the lactiferous sinus or **ampullæ**, which serve as reservoirs for the milk.

Alveolar epithelium is cuboidal in its resting phase, and columnar during lactation. During pregnancy the alveoli enlarge, and the cells undergo rapid multiplication. At the commencement of lactation, the cells in the center of the alveolus undergo fatty degeneration, and are eliminated in the first milk, as **colostrum corpuscles**. The peripheral cells of the alveolus remain, and form a single layer of granular, short columnar cells, with spherical nuclei, lining the basement membrane. The cells, during the state of activity of the gland, are capable of forming, in their interior, oil globules, which are then ejected into the lumen of the alveolus, and constitute the milk globules. When the acini are distended by the accumulation of the secretion the lining epithelium becomes flattened.

C) The Stroma – It forms the supporting frame work of the gland.

The **fibrous tissue** invests the entire surface of the mamma, It forms septa, known as the suspensory ligaments (Of Cooper) which anchor the skin & gland to the Pectoral fascia.

The **fatty tissue** covers the surface of the gland, and occupies the interval between its lobes. It usually exists in considerable abundance, and determines the form and size of the gland. There is no fat immediately beneath the areola and papilla.

Muscles of Pectoral Region :

- **Pectoralis Major** – Originates from Ant. Surface of medial half of clavicle , Half the breadth of anterior surface of sternum upto 6th costal cartilages , second to sixth costal cartilages, Aponeurosis of the external oblique muscle of the abdomen. It is inserted by a bilaminar tendon on the lateral lip of the bicipital groove. The two laminae are continuous with each other inferiorly. Nerve supply is through medial and

lateral pectoral nerves.

- **Pectoralis Minor** – 3rd, 4th, 5th ribs, near the costochondral junction, intervening fascia covering external intercostal muscles. Insertion is into medial border and upper surface of the coracoid process. Nerve supply is through medial and lateral pectoral nerves.
- **Subclavius** – First rib at the costochondral junction. Insertion into subclavian groove in the middle 1/3rd of the clavicle. Nerve supply to the subclavius is from upper trunk of brachial plexus.

Vessels and Nerves —

Arteries – The arteries are derived from the thoracic branches of the axillary, the intercostals, and the internal mammary.

Veins - The veins describe an anastomotic circle around the base of the papilla, called by Haller the circulus venosus. From this, large branches transmit the blood to the circumference of the gland, and end in the axillary and internal mammary veins.

Lymphatics - The breast lymph nodes include:

- supraclavicular nodes – above the collarbone
- infraclavicular (or subclavicular) nodes – below the collarbone
- axillary nodes – in the armpit (axilla)

There are about 30–50 lymph nodes in the axilla. The number varies from woman to woman. The axillary lymph nodes are divided into 3 levels according to how close they are to the pectoral muscle on the chest:

- level I (low axilla) – located in the lower or bottom part of the armpit, along the outside border of the pectoral muscle
- level II (mid axilla) – located in the middle part of the armpit, beneath the pectoral muscle
- level III (high axilla) – located below and near the centre of the collarbone, above the breast area and along the inside border of the pectoral muscle.

When breast cancer spreads, it usually goes to level I lymph nodes first, to level II next and then to level III.

- internal mammary nodes – inside the chest around the breastbone (sternum)
- Some lymph from the breast also reaches the cephalic node, the posterior intercostal nodes & the subdiaphragmatic & subperitoneal lymph plexuses.

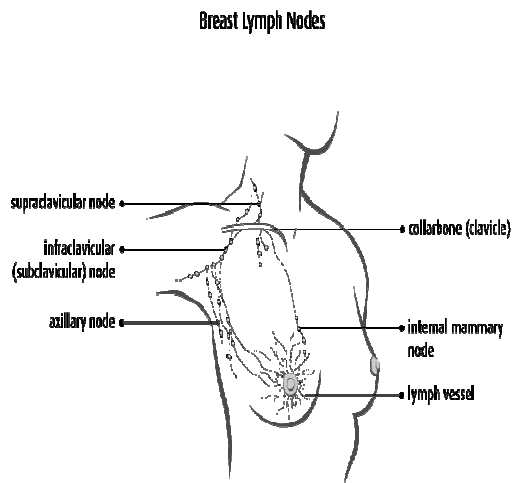


Fig. 2. Breast Lymph Nodes

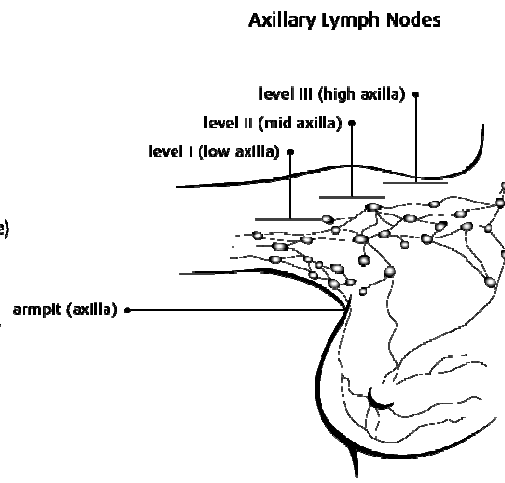


Fig. 3 Axillary lymph nodes

Nerves - The **nerves** are derived from the anterior and lateral cutaneous branches of the fourth, fifth, and sixth thoracic nerves.

Breasts Physiology

Development of the Breasts

The breasts, begin to develop at puberty. This development is stimulated by the estrogens of the monthly female sexual cycle; estrogens stimulate growth of the breasts' mammary glands plus the deposition of fat to give the breasts mass. In addition, far greater growth occurs during the high-estrogen state of pregnancy, and only then does the glandular tissue become completely developed for the production of milk.

Estrogens Stimulate Growth of the Ductal System of the Breasts.

All through pregnancy, the large quantities of estrogens secreted by the placenta cause the ductal system of the breasts to grow and branch. Simultaneously, the stroma of the breasts increases in quantity, and large quantities of fat are laid down in the stroma.

Also important for growth of the ductal system are at least four other hormones: growth hormone, prolactin, the adrenal glucocorticoids, and insulin. Each of these is

known to play at least some role in protein metabolism, which presumably explains their function in the development of the breasts.

Progesterone Is Required for Full Development of the Lobule-Alveolar System.

Final development of the breasts into milk-secreting organs also requires progesterone. Once the ductal system has developed, progesterone—acting synergistically with estrogen, as well as with the other hormones mentioned—causes additional growth of the breast lobules, with budding of alveoli and development of secretory characteristics in the cells of the alveoli. These changes are analogous to the secretory effects of progesterone on the endometrium of the uterus during the latter half of the female menstrual cycle.

Prolactin Promotes Lactation

Although estrogen and progesterone are essential for the physical development of the breasts during pregnancy, a specific effect of both these hormones is to inhibit the actual secretion of milk. Conversely, the hormone prolactin has exactly the opposite effect on milk secretion—promoting it. This hormone is secreted by the mother's anterior pituitary gland, and its concentration in her blood rises steadily from the fifth week of pregnancy until birth of the baby, at which time it has risen to 10 to 20 times the normal non-pregnant level. In addition, the placenta secretes large quantities of human chorionic somatomammotropin, which probably has lactogenic properties, thus supporting the prolactin from the mother's pituitary during pregnancy. Even so, because of the suppressive effects of estrogen and progesterone, no more than a few milliliters of fluid are secreted each day until after the baby is born. The fluid secreted during the last few days before and the first few days after parturition is called colostrum; it contains essentially the same concentrations of proteins and lactose as milk, but it has almost no fat and its maximum rate of production is about 1/100 the subsequent rate of milk production.

Immediately after the baby is born, the sudden loss of both estrogen and progesterone secretion from the placenta allows the lactogenic effect of prolactin from the mother's pituitary gland to assume its natural milk-promoting role, and over the next 1 to 7 days, the breasts begin to secrete copious quantities of milk instead of colostrum. This secretion of milk requires an adequate background secretion of most of the mother's other hormones as well, but most important are growth hormone,

cortisol, parathyroid hormone, and insulin. These hormones are necessary to provide the amino acids, fatty acids, glucose, and calcium required for milk formation.

After birth of the baby, the basal level of prolactin secretion returns to the nonpregnant level over the next few weeks. However, each time the mother nurses her baby, nervous signals from the nipples to the hypothalamus cause a 10- to 20-fold surge in prolactin secretion that lasts for about 1 hour, which is also shown in .This prolactin acts on the mother's breasts to keep the mammary glands secreting milk into the alveoli for the subsequent nursing periods. If this prolactin surge is absent or blocked as a result of hypothalamic or pituitary damage or if nursing does not continue, the breasts lose their ability to produce milk within 1 week or so. However, milk production can continue for several years if the child continues to suckle, although the rate of milk formation normally decreases considerably after 7 to 9 months.

Hypothalamus Secretes Prolactin Inhibitory Hormone.

The hypothalamus plays an essential role in controlling prolactin secretion, as it does for almost all the other anterior pituitary hormones. However, this control is different in one aspect: The hypothalamus mainly stimulates production of all the other hormones, but it mainly inhibits prolactin production. Consequently, damage to the hypothalamus or blockage of the hypothalamic-hypophysial portal system often increases prolactin secretion while it depresses secretion of the other anterior pituitary hormones.

Therefore, it is believed that anterior pituitary secretion of prolactin is controlled either entirely or almost entirely by an inhibitory factor formed in the hypothalamus and transported through the hypothalamic-hypophysial portal system to the anterior pituitary gland. This factor is called prolactin inhibitory hormone. It is almost certainly the same as the catecholamine dopamine, which is known to be secreted by the arcuate nuclei of the hypothalamus and can decrease prolactin secretion as much as 10-fold.

Hormonal changes at Menopause:

By the time a woman reaches her late 40s and early 50s, menopause is beginning or is well underway. At this time, the levels of estrogen and progesterone begin to fluctuate, with levels of estrogen dramatically decreasing. This leads to many

of the symptoms commonly associated with menopause. With this reduction in the stimulation by estrogen to all tissues of the body, including the breast tissue, there is a reduction in the glandular tissue of the breasts. Without estrogen, the connective tissue of the breast becomes dehydrated and inelastic, and the breast tissue, which was prepared to make milk, shrinks and loses shape. This leads to the "sagging" of the breasts often associated with women of this age.

LITERATURE REVIEW OF ARBUDA

Literature review from ancient Sanskrit literature & Ayurvedic samhitas

❖ Vedic Period –

The disease was even prevalent during the Vedic period. In Rugveda, it has been mentioned that arbuda is just like a danava & is destroyed by Indra. Rugved tikakar Sayan says that arbuda is ambu (water) to destroy it use Agni (agnikarma).

References from Atharvaveda

In the ancient classics, Arbuda has not mentioned directly but the diseases like Apachi, Gulma, Granthi & Gandamala which resembles the clinical features of Arbuda have been mentioned.

- Just as the physician treat the diseases like Gandamala (Cervical lymphadenopathy) by the rays of the sun & moon along with medicines, in same way human being by acquiring knowledge destroy the innocence.⁴⁶
- Just as good physician treat the diseases like Gandamala (Cervical lymphadenopathy), in the same way human being should overcome his drawbacks.⁴⁷
- Just as Gandamalas (Cervical lymphadenopathy) become dry or green some times, in a same way bad feelings become weak & strong sometimes⁴⁸.Atharvaveda has mentioned some charm for curing tumours called gayanya.

Vyutpatti –⁴⁹

“Arbuda” is constituted of the root word “Arba “ and the verb “Udeti”

The word arbuda has been derived from the root “Arb” with suffix “Ena” along with augmentation of “Nd,” which means “to destroy”, “to kill” or to “hurt”. The verb “Udeti” means to elevate, to rise. Grammatically, it denotes the fleshy outgrowths.

Arbuda Nirukti –

- 1) Mansapindakara Rogabhede (a fleshy mass)
- 2) Tatsankhyateshu Dashakotisankhya (number of 10 billion-may be interpreted as uncontrolled multiplication of cells)
- 3) Parvatbhede (a mountain)
- 4) Asurabhede (a demon)
- 5) Kadrabhede Sarpabhede a demon(i.e., a serpent)
- 6) Megha (Clouds)
- 7) Mansapindabhede (a swelling)

During the Vedic period, arbuda was considered as a serpent like demon that was conquered by “Lord Indra”.

Definition of Arbud

Vata, Pitta Kapha dosha having got aggravated in any part of the body and afflicting the Mansa dhatu, produce a circular, fixed, slightly painful, big, broad based slow growing non-suppurating and dense elevation (swelling) of mansa. The same is called as “arbuda” by the scholars. Aggrevation of these doshas and vitiation of rasa-rakta-mansa-meda dhatus in stana can lead to causation of dushta stanarbuda¹⁹.

Nidan Panchak

Dosha – Vata,Pitta, Kapha

Dushya –Rasa-Rakta⁵⁰, Mansa⁵¹.Meda⁵²

Agni – Dhatvagni dushti

Srotasa – Rasavaha,Raktavaha, Mansavaha srotasa⁵³,Medovaha

Marg –Bahya roga marga⁵⁴

Sthana – Anywhere in the body

Characteristics of Arbud –

- ✓ Arbud is bigger than granthi
- ✓ Has the predominance of kapha dosha and meda dhatu ,is sthira (fixed/hard) hence does not suppurate.⁵⁵
- ✓ Elevated swelling.⁵⁶

Purvarupa of Arbuda –

Purvarupa of arbud has not been mentioned in the ancient texts.

Rupa of Arbuda (signs and symptoms)

There are six types of arbud mentioned in the texts. ^{57, 58}

1. **Vataja Arbud –**

Characterised by pain - pricking or splitting sensation, Black discolouration, feels hard on touch, feels like distended bladder and secretes clear fluid if it bursts open

2. **Pittaj Arbud ⁵⁹–**

Characterised by burning sensation, severe irritation similar to that caused by burns, hot to touch, red or yellow discolouration and when burst discharges hot & excessive amount of blood.

3. **Kaphaja Arbud –**

Is cold to touch, minimal discolouration or no discolouration, slight pain, severe itching, secretes white, thick pus when it bursts open.

4. **Raktarbuda ^{60, 61} –**

This arbud is characterized by elevated swelling (lump of muscle) caused due to vitiated doshas. These vitiated doshas cause contraction in rakta (blood) & sira (blood vessels) thus creating muscular lump which is covered with fleshy buds. There is very less or no suppuration. It grows very fast. There is continuous discharge of blood. It is considered incurable and the person suffers from complication like anaemia.

5. **Mansarbud ⁶²–**

This arbud is caused due to trauma of a fist or any type of blow. This causes injury to the muscles which get vitiated and swollen. It is non-suppurating, stony hard and fixed. A person who has excessive intake of mansa (non-veg food) is prone to this type of arbud due to further vitiation of the mansa dhatu.

6. **Medoja Arbud ⁶³ –**

This arbud is smooth, big in size, increases and decreases according to the body fat. It doesn't cause much pain. When it bursts open discharges secretion like pinyak (oil-cake) or sarpi (ghee).

Aahariya Nidan of Arbuda –(Dietary factors in causation of Arbud) & Samprapti

Arbud bears resemblance with granthi and shotha. The causation of mansaja granthi is specified as excessive use of mansavardhak aahar (consumption of meat) . Medoja granthi is caused by excessive intake of medovardhak aahar (fatty food).

Samprapti : Dosha prakop (Aggravation of dosha in any part of the body)



Dhatu dushti - especially Mansa dushti(vitiation of dhatu)



Vitiation of Mansa dhatu causes Mansa elevation (swelling)



Formation of **Arbud**

Characteristic features of Arbud :

- Gatra Pradesh (anywhere in the body)
- Vrutta (round)
- Sthir (fixed)
- Mandruja (Slightly painful)
- Mahant (big)
- Analpamoola (which is deep seated)
- Chirvruddhi (which grows slowly)
- Apaka (which does not suppurate)

This characteristic is seen because of the dominance of Kapha dosha & meda dhatu & also because of the immobilization & binding of doshas in them⁶⁵. Tumours do not undergo suppuration because predominance of Kapha dosha & meda dhatu.

Upadrava –

When there is occurrence of arbud at the same site of prevailing arbud or after the excision of earlier arbud it is called Adhyarbud.

Dwirarbud can be defined as arbud occurring at the same or other site, at the same time or after sometime of occurrence of the earlier arbud⁶⁴.

Sadhya of Arbud – (curability of Arbud)⁶⁵

Kashta Arbud(Difficult to cure)

Vata
Pitta
Kapha
Meda

Asadhya Arbud(incurable)

Raktarbud
Mansarbud
Adhyarbud
Dwirarbud

Arbud becomes asadhya

- ✓ if there is oozing of secretions from the arbud
- ✓ if it is affecting marmsthana(vital points)
- ✓ if the arbud is affecting the srotasa
- ✓ if it is fixed
- ✓ if it develops adhyarbud or dwirarbud.

▪ **Chikitsa - Sutra of Arbuda :-**⁶⁶

There is similarity between Granthi and Arbuda with respect to pradesha(site), akruti, Dosha and Dushya. Hence, the physician should apply the treatment mentioned for granthi.

- **Shodhana** – Vaman and Virechana
- **Swedana** – Hot fomentation at the site of Arbuda
- **Vilayana** – Causing ripening in the apakva granthi using ashma, wood, thumb pressing etc.
- **Agni Karma** – If the Granthi is ripe or fully matured it should be cauterized.
- **Vrana Karma** –Performing the treatment advised in wounds
- **Shastrkarma**- If the Granthi cannot be cauterized or if it is cauterized partially i.e. if it is deep rooted it can grow again. Hence, it is advisable to excise it totally.

CANCER

Introduction & History:

The Greek term carcinoma is the medical term for a malignant tumor derived from epithelial cells. Hippocrates described several kinds of cancers. He called benign tumours oncos, Greek for swelling, and malignant tumours carcinos, Greek for crab or crayfish. This name comes from the appearance of the cut surface of a solid malignant tumour, with "the veins stretched on all sides as the animal the crab has its feet, whence it derives its name" He later added the suffix -oma, Greek for swelling, giving the name carcinoma. It is **Celsus** who translated carcinos into the Latin cancer, also meaning crab. Galen used "oncos" to describe all tumours, the root for the modern word oncology.

Definition:-

1. **Cancer:** Cancer is derived from Latin root word "CANERUM" and Greek word "KARKINOS" which means one animal –Crab. The crab once grabs the patients with its invading pioneers, doesn't let it go until the victim croaks. Cancer is cellular tumor the natural course of which is fatal and usually associated with formation of secondary tumours.
2. **Neoplasm:** It is made of two words, NEOS +PLASUM. In Greek word "Neos" meaning new. "Plasum" meaning third formed i.e. new and abnormal growth in a different way from their non-malignant ancestors. Neoplasm is a mass of new tissue, which persists and grows independent of its surrounding structures and which has no physiological use.
3. **Tumour:** Tumor is derived from Latin root word "Tumex" i.e. to Swell. Tumor is an abnormal mass of tissue, which exceeds and is un-co-ordinate with that of normal tissues and persists in the same excessive manner.

How does Cancer occur?

Cancer is a genetic disease in its origins. Progression from normal tissue to invasive cancer is thought to take place over 5 to 20 years and is influenced by hereditary

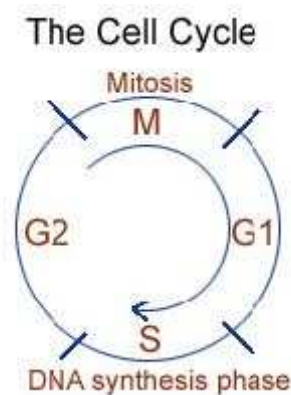
genetic factors as well as somatic genetic changes Cancer progression is a multistep process driven by a series of accumulating genetic or epigenetic changes.

The hallmark of cancer is uncontrolled growth.

All cancers begin in cells, the body's basic unit of life. To understand cancer, it's helpful to know what happens when normal cells become cancer cells.

The body is made up of many types of cells. These cells grow and divide in a controlled way to produce more cells as they are needed to keep the body healthy. When cells become old or damaged, they die and are replaced with new cells.

Normal Cell Cycle^{68,69}



Cell division is the process by which cells reproduce (mitosis). The cell cycle is a series of changes the cell goes through from the time it is first formed until it divides into two daughter cells. It starts at mitosis (M-phase) and ends with mitosis. In between are the G-1, S, and G-2 phases. The duration of S, M and G-2 are relatively constant in different tissues.

Between the M-phase and the S-phase is a gap (G-1)

where production of RNA, proteins, and enzymes needed for DNA synthesis occurs.

The duration of G-1 varies and determines the length of the cell cycle.

The S-phase is when DNA synthesis occurs.

Between the S-phase and M-phase is a second gap (G-2). Cells are thought to prepare for mitosis in G-2 when specialized proteins and RNA are produced. G-0 is a dormant phase.

The four phases of mitosis are:

1. **Prophase** – consists of 4 steps -Centrosomes separate and migrate to opposite poles; Centrioles separate; Chromatin is transformed into chromosomes composed of pairs of filaments called chromatids (each is a complete genetic copy of its chromosome); The nuclear membrane disappears.
2. **Metaphase** - Paired chromosomes become lined up between the centrioles.

3. **Anaphase** - Chromatids are pulled toward the centrioles. One chromatid from each pair goes to each daughter cell.
4. **Telophase** (divided into parts I and II)
 - a. Telophase I -Chromosomes become more polarized and transformed into thread-like structures; A nuclear membrane forms around each set of chromosomes forming a new nucleus with a nucleolus; The centrioles duplicate.
 - b. Telophase II -Actual dividing of the cell occurs (cytokinesis); Cytoplasm splits and two daughter cells are formed ;

However, sometimes this orderly process goes wrong. The genetic material (DNA) of a cell can become damaged or changed, producing mutations that affect normal cell growth and division. When this happens, cells do not die when they should and new cells form when the body does not need them. The extra cells may form a mass of tissue called a tumor⁷⁰.

Not all tumors are cancerous; tumors can be benign or malignant.

- **Benign tumors** aren't cancerous. They can often be removed, and, in most cases, they do not come back. Cells in benign tumors do not spread to other parts of the body.
- **Malignant tumors** are cancerous. Cells in these tumors can invade nearby tissues and spread to other parts of the body. The spread of cancer from one part of the body to another is called metastasis.

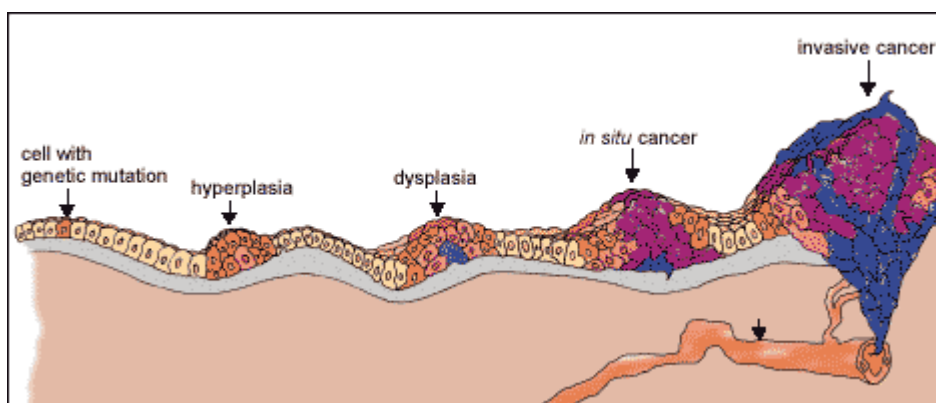


Fig. 4 . The stages of tumor development. A malignant tumor develops across

time, as shown in this diagram. This tumor develops as a result of four mutations, but the number of mutations involved in other types of tumors can vary. We do not know the exact number of mutations required for a normal cell to become a fully malignant cell, but the number is probably less than ten.

- a. The tumor begins to develop when a cell experiences a mutation that makes the cell more likely to divide than it normally would.
- b. The altered cell and its descendants grow and divide too often, a condition called hyperplasia. At some point, one of these cells experiences another mutation that further increases its tendency to divide.
- c. This cell's descendants divide excessively and look abnormal, a condition called dysplasia. As time passes, one of the cells experiences yet another mutation.
- d. This cell and its descendants are very abnormal in both growth and appearance. If the tumor that has formed from these cells is still contained within its tissue of origin, it is called in situ cancer. In situ cancer may remain contained indefinitely.
- e. If some cells experience additional mutations that allow the tumor to invade neighboring tissues and shed cells into the blood or lymph, the tumor is said to be malignant. The escaped cells may establish new tumors (metastases) at other locations in the body.

Sometimes tumours do not stay harmlessly in one place. They destroy the part of the body in which they originate and then spread to other parts where they start new growth and cause more destruction. This characteristic distinguishes cancer from benign growths, which remain in the part of the body in which they start. Although benign tumours may grow quite large and press on neighbouring structures, they do not spread to other parts of the body. Frequently, they are completely enclosed in a protective capsule of tissue and they typically do not pose danger to human life like malignant tumors (cancer) do.

Although cancer is often referred to as a single condition, it actually consists of more than 100 different diseases. These diseases are characterized by uncontrolled growth and spread of abnormal cells. Cancer can arise in many sites and behave differently depending on its organ of origin. Breast cancer, for example, has different

characteristics than those of lung cancer. It is important to understand that cancer originating in one body organ takes its characteristics with it even if it spreads to another part of the body. For example, metastatic breast cancer in the lungs continues to behave like breast cancer when viewed under a microscope, and it continues to look like a cancer that originated in the breast.

Cancer types can be grouped into broader categories. The main categories of cancer include:

- **Carcinoma** - cancer that begins in the skin or in tissues that line or cover internal organs. There are a number of subtypes of carcinoma, including adenocarcinoma, basal cell carcinoma, squamous cell carcinoma, and transitional cell carcinoma.
- **Sarcoma** - cancer that begins in bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue.
- **Leukemia** - cancer that starts in blood-forming tissue such as the bone marrow and causes large numbers of abnormal blood cells to be produced and enter the blood.
- **Lymphoma and myeloma** - cancers that begin in the cells of the immune system.
- **Central nervous system cancers** - cancers that begin in the tissues of the brain and spinal cord.

Breast Cancer

Breast cancer is a malignant tumor that starts in the cells of the breast. A malignant tumor is a group of cancer cells that can grow into (invade) surrounding tissues or spread (metastasize) to distant areas of the body. The disease occurs almost entirely in women, but men can get it, too. According to the research done up to now some factors which can contribute towards the occurrence of Breast cancer. Of these some are known while some are considered as probable factors in the occurrence. These are termed as risk factors.

Risk Factors for Breast Cancer

- **Sex** - Most breast cancers occur in women. The main reason women develop breast cancer is because of the effects of hormones – the breast cells of women are exposed to the female hormones estrogen and progesterone. These hormones, especially estrogen, are associated with breast cancer and encourage the growth of some breast cancers.
- **Age** - The risk of developing breast cancer increases with age. The longer a woman lives, the greater her chances of developing breast cancer. The risk of breast cancer increases each decade until menopause. At menopause, the risk slows down or levels off. However, breast cancer is more common after menopause. Breast cancer mostly occurs in women between the ages of 50 and 69 years of age.

The following factors are known to increase the risk of developing breast cancer.

◆ **Personal history of breast cancer**

Women who have had breast cancer are at an increased risk of developing breast cancer again. This new primary breast cancer can develop in the same breast where the first cancer started or in the opposite breast. Women who have a history of carcinoma in situ are at an increased risk of developing breast cancer: Ductal carcinoma or Lobular carcinoma in situ increases the risk of invasive breast cancer.

◆ **Family history of breast cancer**

A family history of breast cancer means that one or more close blood relatives have or had breast cancer. Some families have more cases of breast cancer than would be expected by chance. Sometimes it is not clear whether the family's pattern of cancer is due to chance, shared lifestyle factors, an inherited (hereditary) factor that has been passed on from parents to children through genes or a combination of these.

- ◆ The risk of developing breast cancer is increased if:
 - one or more first-degree relatives (such as a mother, sister or daughter) had breast cancer, especially if they were diagnosed before menopause

-
- Having one first-degree relative with breast cancer approximately doubles a woman's risk.
 - The more first-degree relatives with breast cancer, the greater the risk.
 - Second-degree relatives (such as a grandmother, aunt or niece) from either side of the family who had breast cancer .The risk with second-degree relatives is not as much as the risk with first-degree relatives.
 - a relative had cancer in both breasts (bilateral breast cancer) before menopause
 - 2 or more relatives had breast cancer or ovarian cancer
 - a relative had both breast cancer and ovarian cancer
 - a male relative had breast cancer
 - a relative had other multiple cancers

◆ **Breast Density** -Breasts that have larger amounts of connective, gland and milk duct tissues than fatty tissue are considered dense. Breast density can only be seen on a mammogram. On a mammogram, fatty tissue looks dark, while dense tissue looks white, like tumours, so it can hide a cancer. Women with dense breasts have a 4 to 6 times greater risk of breast cancer compared to women with little or no dense breast tissue.

◆ **BRCA gene mutations**

Genetic mutations are changes to a gene, which can increase the risk of developing cancer. Inherited gene mutations are passed on from a parent to a child. Only a small portion of breast cancers (about 5–10%) are caused by inheriting a gene mutation. Mutations in BRCA1 (breast cancer gene 1) and BRCA2 (breast cancer gene 2) make some women more susceptible to developing breast cancer. These genes appear to play a role in controlling the growth of cancer cells. They are called tumour suppressor genes. BRCA1 and BRCA2 mutations are rare, occurring in approximately 1 in 500 people.

Studies have shown that women with inherited BRCA1 or BRCA2 gene mutations have up to an 80% lifetime risk of developing breast cancer. Women with an inherited mutation of these genes have an increased risk of developing

breast cancer at a younger age (usually before menopause) compared to others. Women with a BRCA gene mutation also have an increased risk of developing cancer in both breasts (bilateral breast cancer). If they develop cancer in one breast, they have an increased risk of developing cancer in the other breast. BRCA gene mutations also increase the risk of a woman developing ovarian cancer at any age.

- ◆ **Ethnicity** - Ashkenazi Jewish ancestry (Eastern European ancestry) have an increased risk of developing breast cancer. This is because BRCA1 and BRCA2 gene mutations are more common in Ashkenazi women. About 1 in 40 Ashkenazi Jewish women carry a BRCA gene mutation, compared with 1 in 500 in the general population.

- ◆ **Rare genetic conditions**

There are some rare inherited genetic conditions that are associated with an increased breast cancer risk

Genetic Mutations in the following Genes:

- TP53 (Tumor suppressor gene) -Li-Fraumeni syndrome – People with Li-Fraumeni syndrome have an increased risk of developing several specific types of cancer, such as breast cancer, osteosarcoma, soft tissue sarcoma and leukemia..
- ATM gene - Ataxia-telangiectasia (AT) – This gene is responsible for repairing damaged DNA. Certain families with a high rate of breast cancer have been found to have mutations of this gene.
- PTEN (Tumor suppressor gene) - Cowden syndrome – Cowden syndrome is a rare disease that predisposes people to breast cancer, gastrointestinal cancers and thyroid cancer.
- STK 11(also known as LKB1- Tumor suppressor gene)- Peutz-Jeghers syndrome – This disorder increases the risk of developing gastrointestinal, breast, ovarian and testicular cancers.

-
- CHEK2 (tumour suppressor gene) increases breast cancer risk when it is mutated. CHEK2 mutations have been identified in some families with Li-Fraumeni syndrome.

- ◆ **Reproductive history**

Estrogen is the main hormone associated with breast cancer. Estrogen affects the growth of breast cells. It is believed to play an important role in breast cancer cell growth. The type and duration of exposure to estrogen influences the chances of breast cancer developing.

- ◆ **Early menarche**

Beginning to menstruate (menarche) at an early age (11 or younger) increases the length of time women are exposed to estrogen and other hormones. This increases the risk of breast cancer.

- ◆ **Late menopause**

Menopause occurs as the ovaries stop producing hormones and the level of hormones (mainly estrogen and progesterone) in the body drops. This causes a woman to stop menstruating. Later age at menopause (after age 55) increases the length of time women are exposed to estrogen and other hormones. This increases the risk of breast cancer. Likewise, menopause at a younger age decreases the length of time breast tissue is exposed to estrogen and other hormones and has been associated with a lower risk of breast cancer.

- ◆ **Late pregnancy or no pregnancies**

Pregnancy interrupts the exposure of breast cells to circulating estrogen and reduces the total number of lifetime menstrual cycles. Women who have their first full-term pregnancy after the age of 30 have a slightly higher risk of breast cancer than women who have at least one full-term pregnancy at an earlier age. Becoming pregnant at an early age (such as before age 20) reduces breast cancer risk.

- ◆ **Parity**

The more children a woman has, the greater the protection against breast cancer.

Not becoming pregnant at all (called nulliparity) increases the risk of breast cancer.

◆ **Exposure to ionizing radiation**

Women who receive radiation therapy to the lymph nodes in the chest, neck and armpit (mantle radiation field) for Hodgkin lymphoma have an increased risk of breast cancer. The increase in risk is relative to the women's age during treatment. The risk of breast cancer is increased if mantle radiation therapy for Hodgkin lymphoma was given before the age of 30. Risk is further increased if the radiation treatment was given during puberty. Breast cancer risk is greatly increased if chemotherapy is combined with radiation therapy to treat Hodgkin lymphoma before the age of 15 years. The benefit of treating the cancer usually far outweighs the risk of developing a second cancer from radiation therapy treatment. In the past, medical radiation therapy was used to treat health problems as such as tuberculosis, postpartum mastitis, acne or an enlarged thymus gland. Women who were given medical radiation therapy to the chest area for these diseases are at an increased risk of developing breast cancer.

Women who were exposed to ionizing radiation during the atomic bomb blasts are also at an increased risk of developing breast cancer, especially if they were exposed during puberty.

◆ **Hormone replacement therapy**

Research shows that prolonged use of hormone replacement therapy (HRT), especially estrogen plus progestin (called combined HRT), increases the risk of breast cancer. Data were pooled from numerous studies, and the analysis showed an increased risk of breast cancer with long-term (5 years or longer) use of combined HRT for current or recent users.

The findings of the Women's Health Initiative (WHI) study showed the risk of breast cancer went up by about 1% for every year that women took estrogen alone and about 8% for every year that they took combined HRT. Increased risk was even seen with comparatively short-term use of combined HRT compared to placebo. The increased risk appears to disappear a few years after stopping HRT.

- ◆ **Oral contraceptives**

Oral contraceptives that contain both estrogen and progesterone cause a small increase in the risk of breast cancer, especially among women who have used oral contraceptives for 10 or more years. The increased risk disappears after stopping oral contraceptives. However, current and recent (less than 10 years since last use) users have a slight increased risk compared with women who have never used oral contraceptives.

- ◆ **Atypical hyperplasia**

Atypical hyperplasia is a condition where there is an increased number of abnormal (atypical) cells in the breast tissue. Atypical hyperplasia increases a woman's risk of developing breast cancer.

- ◆ **Alcohol**

Drinking alcohol increases a woman's risk of breast cancer. Even low levels of alcohol consumption (just over 1 drink per day) can increase a woman's risk of breast cancer. The risk increases with the amount of alcohol consumed. One possible reason for this is that alcohol is thought to cause higher levels of estrogen. Alcohol may also decrease some essential nutrients that protect against cell damage, such as folate (a type of B vitamin), vitamin A and vitamin C.

- ◆ **Being obese**

Obesity increases the risk of breast cancer in post-menopausal women. Studies have shown that women (who had never taken hormone replacement therapy) with a body mass index (BMI) of 31.1 or higher had a 2.5 times greater risk of developing breast cancer than those with a BMI of 22.6 or lower. Ovarian hormones, estrogens in particular, play an important role in breast cancer. Many of the risk factors for breast cancer are believed to result from the cumulative dose of estrogen to the breast tissue. The ovaries make most of the body's estrogen, but after menopause fat tissue produces a small amount of estrogen. Having more fat tissue can increase estrogen levels and increase the chances of breast cancer developing.

◆ **High socio-economic status**

Breast cancer risk is slightly increased in women with higher incomes. This may be because they tend to start having children later in life or have fewer children. They may also be more likely to take hormone replacement therapy after menopause. These lifestyle factors are linked to an increased risk of breast cancer.

Possible risk factors

The following factors have some association with breast cancer, but there is not enough evidence to say they are known risk factors. Further study is needed to clarify the role of these factors for breast cancer.

- ◆ **Physical inactivity** – Studies show that greater physical activity is associated with a lower risk of breast cancer, for both premenopausal and post-menopausal breast cancer. The research evidence suggests very strongly that physical inactivity is a risk factor for breast cancer. There are a number of studies that are looking into the role of exercise in breast cancer.
- ◆ **Adult weight gain** – There is consistent evidence from studies that adult weight gain is a probable cause of post-menopausal breast cancer. It is not certain whether reducing weight would reduce the risk of breast cancer.
- ◆ **Birth weight** – Evidence suggests that exposures early in life may have important effects on cancer risk – such as high concentrations of maternal estrogens during pregnancy and increased breast cancer development later in life. Greater birth weight raises circulating maternal estrogen levels, exposing the fetus to more estrogen and possibly increasing the risk of premenopausal breast cancer.

Some benign breast conditions – Most benign (non-cancerous) breast conditions do not increase a woman's risk of developing breast cancer. However, there may be a relationship between benign breast conditions, such as fibrocystic breast changes, and family history of breast cancer. Some benign breast conditions may slightly increase a woman's risk of breast cancer if they are associated with an increased number (overgrowth) of cells: hyperplasia, complex fibroadenoma, sclerosing adenosis, papillomatosis, and radial scar

Unknown risk factors

The following are factors for which there is not enough evidence or the evidence is inconclusive. In other words, it can't be determined for sure whether these risk factors are or are not associated with breast cancer. Diethylstilbestrol (DES), High-fat diet, Soy, environmental exposures, a diet low in vegetables and fruit

Signs and Symptoms

Signs and symptoms of breast cancer are:

- ✓ **Lump in the breast** – the most common first sign, the lump is usually first felt by the person. Sometimes the lump is found on a screening mammogram before it can be felt. The lump is present all the time and does not get smaller or go away with the menstrual cycle. The lump may feel like it is attached to the skin or chest wall and cannot be moved. The lump may feel hard, irregular in shape and very different from the rest of the breast tissue. The lump may be tender, but it is usually not painful. Pain is more often a symptom of a non-cancerous (benign) condition, but should be checked by a doctor.
- ✓ **Lump in the armpit (axilla)** - Sometimes small, hard lumps in the armpit may be a sign that breast cancer has spread to the lymph nodes. Although these lumps are often painless, they may be tender.
- ✓ **Changes in breast shape or size** - A change in the shape or size of the breast may signal a problem.
- ✓ **Skin changes** - The skin of the breast may become dimpled or puckered. A thickening and dimpling of the skin is sometimes called orange peel skin, or *peau d'orange*. Redness, swelling and increased warmth (signs that look like an infection) may be a sign of inflammatory breast cancer. Itching of the breast or nipple may be a sign of inflammatory breast cancer. Itchiness is often not relieved by ointments, creams or other medications.
- ✓ **Nipple changes** - Crusting, ulcers or scaling on the nipple may be a sign of some rare types of breast cancer such as Paget's disease of the breast.
- ✓ **Discharge from the nipples** This can be caused by many conditions, most of which are benign. But discharge from one nipple may be a sign of breast

cancer, especially if it appears without squeezing the nipple (is spontaneous) and is blood-stained.

Late signs and symptoms

Late signs and symptoms occur as the cancer grows larger or spreads to other parts of the body, including other organs.

- ✓ bone pain
- ✓ nausea, loss of appetite, weight loss and jaundice
- ✓ shortness of breath, cough and buildup of fluid around the lungs (pleural effusion)
- ✓ headache, double vision and muscle weakness.

Types of Breast Cancer

Ductal Carcinoma

Ductal means that the cancer starts inside the milk ducts, **carcinoma** refers to any cancer that begins in the skin or other tissues (including breast tissue) that cover or line the internal organs- such as breast tissue.

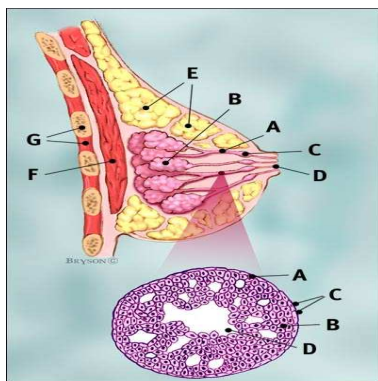
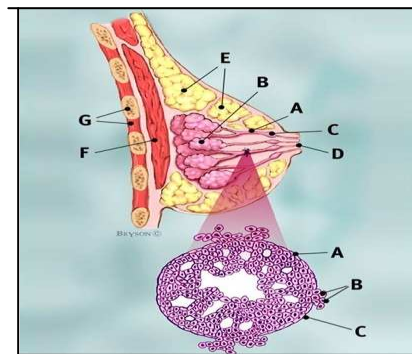


Fig.5. Ductal Carcinoma in



situ

Fig.6 Invasive ductal carcinoma (IDC)

Breast profile: A ducts ,B lobules , C dilated section of duct to hold milk ,D nipple , E fat , F pectoralis major muscle , G chest wall/rib cage

Enlargement: A normal duct cells , B ductal cancer cells , C basement membrane , D lumen (center of duct)

Ductal carcinoma in situ (DCIS): **in situ** means "in its original place." Thus ,Ductal carcinoma in situ is breast cancer in the duct cells that has not invaded

deeper or spread through the body. Women diagnosed with DCIS have a high likelihood of being cured. Ductal carcinoma in situ (DCIS) is the most common type of non-invasive breast cancer. DCIS is called "non-invasive" because it hasn't spread beyond the milk duct into any normal surrounding breast tissue. DCIS isn't life-threatening, but having DCIS can increase the risk of developing an invasive breast cancer later on.

Invasive ductal carcinoma (IDC): Invasive means that the cancer has "invaded" or spread to the surrounding breast tissues.

Invasive ductal carcinoma refers to cancer that has broken through the wall of the milk duct and begun to invade the tissues of the breast. Over time, invasive ductal carcinoma can spread to the lymph nodes and possibly to other areas of the body.

Features –

- The most common type of breast cancer. (About 80% of all breast cancers diagnosed are IDC)
- Two-thirds of women diagnosed with IDC are 55 or older.
- Invasive ductal carcinoma also affects men.

Sub-types of Invasive Ductal Carcinoma:

IDC Type: Tubular Carcinoma of the Breast

Tubular carcinomas are usually small (about 1 cm or less) and made up of tube-shaped structures called "tubules." These tumors tend to be low-grade, meaning that their cells look somewhat similar to normal, healthy cells and tend to grow slowly. Due to advancement in screening technologies tubular carcinomas are being diagnosed more frequently often before a lump is felt. Tubular carcinomas may account for anywhere from just under 8% to 27% of all breast cancers.

Features:

- The average age of diagnosis for tubular carcinoma is the early 50s, although women can be diagnosed with it at any age.
- This type of cancer is rare in men.

-
- Though tubular carcinoma is an invasive breast cancer, it tends to be a less aggressive type that responds well to treatment.
 - It isn't likely to spread outside the breast and is considered to have a very good prognosis.

IDC Type : Medullary Carcinoma of the Breast

Medullary carcinoma of the breast is a rare subtype of invasive ductal carcinoma (cancer that begins in the milk duct and spreads beyond it), accounting for about 3-5% of all cases of breast cancer. It is called “medullary” carcinoma because the tumor is a soft, fleshy mass that resembles a part of the brain called the medulla.

- **Features:**
 - Can occur at any age, but it usually affects women in their late 40s and early 50s.
- Is more common in women who have a BRCA 1 mutation.
- Cells are usually high-grade in their appearance and low-grade in their behavior .i.e. they look like aggressive, highly abnormal cancer cells, but they don't act like them.
- Medullary carcinoma doesn't grow quickly and usually doesn't spread outside the breast to the lymph nodes.

Hence, it's typically easier to treat than other types of breast cancer.

IDC Type: Papillary Carcinoma of the Breast

An invasive papillary carcinoma usually has a well-defined border and is made up of small, finger-like projections. Often it is grade 2, or moderate grade, on a scale of 1 to 3 — with grade 1 describing cancer cells that look and behave somewhat like normal, healthy breast cells, and grade 3 describing very abnormal, fast-growing cancer cells. In most cases of invasive papillary carcinoma, ductal carcinoma in situ (DCIS) is also present. (DCIS is a type of cancer in which the carcinoma cells are confined to the breast duct).

Features:

Invasive papillary carcinomas of the breast are rare, accounting for less than 1-2% of invasive breast cancers. In most cases, these types of tumors are diagnosed in older women who have already been through menopause.

IDC Type: Cribriform Carcinoma of the Breast

In invasive cribriform carcinoma, the cancer cells invade the stroma (connective tissues of the breast) in nest like formations between the ducts and lobules. Within the tumor, there are distinctive holes in between the cancer cells, making it look something like Swiss cheese. Invasive cribriform carcinoma is usually low grade, meaning that its cells look and behave somewhat like normal, healthy breast cells. In about 5-6% of invasive breast cancers, some portion of the tumor can be considered cribriform. Usually, some ductal carcinoma in situ (DCIS) of the cribriform type is present as well.

Lobular Carcinoma

Lobular means that the abnormal cells start growing in the lobules, the milk-producing glands at the end of breast ducts. **Carcinoma** refers to any cancer that begins in the skin or other tissues that cover internal organs — such as breast tissue.

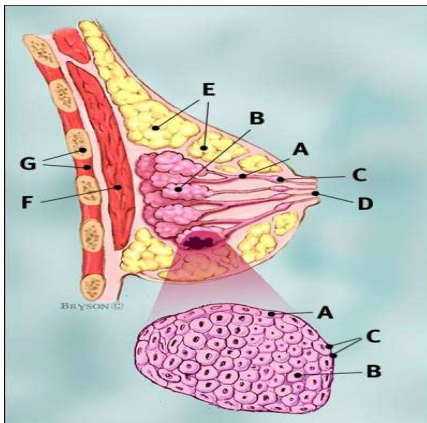


Fig.7
Lobular carcinoma in

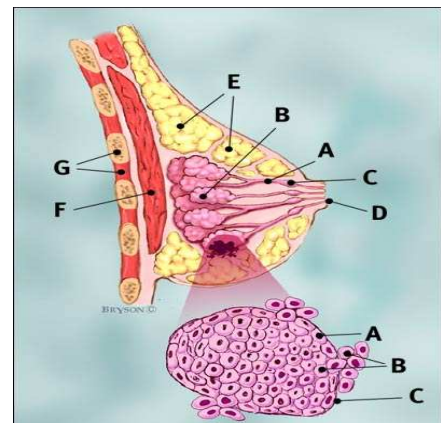


Fig.8 Invasive Lobular

situ carcinoma

Breast profile : **A** ducts, **B** lobules, **C** dilated section of duct to hold milk , **D** nipple, **E** fat, **F** pectoralis major muscle , **G** chest wall/rib cage

Enlargement: **A** normal lobular cells **B** lobular cancer cells **C** basement membrane

Lobular carcinoma in situ (LCIS): In situ or “in its original place”

The term lobular carcinoma *in situ* (LCIS) is misleading. This lesion is more appropriately termed lobular neoplasia (A neoplasia is a collection of abnormal cells.). Strictly speaking, it is not known to be a premalignant lesion, but rather a marker that identifies women at an increased risk for subsequent development of invasive breast cancer. People diagnosed with LCIS tend to have more than one lobule affected. This risk remains elevated even beyond 2 decades, and most of the subsequent cancers are ductal rather than lobular.

Features:

Frequently bilateral. Usually diagnosed before menopause, most often between the ages of 40 and 50. Less than 10% of women diagnosed with LCIS have already gone through menopause.

LCIS is extremely uncommon in men.

Invasive lobular carcinoma (ILC): Breast cancer that begins in the milk-producing lobule cells, but then invades deeper into the breast, carrying the potential of spreading to the rest of the body (metastasizing). Invasive lobular carcinoma (ILC), sometimes called infiltrating lobular carcinoma.

Features:

Second most common type of breast cancer after invasive ductal carcinoma (cancer that begins in the milk-carrying ducts and spreads beyond it). About 10% of all invasive breast cancers are invasive lobular carcinomas. (About 80% are invasive ductal carcinomas.) Although invasive lobular carcinoma can affect women at any age, it is more common as women grow older. About two-thirds of women are 55 or older when they are diagnosed with an invasive breast cancer. ILC tends to occur later in life (early 60s as opposed to the mid- to late 50s).

Other rare conditions of Breast:

Paget's Disease of the Nipple

Paget's disease of the nipple is a rare form of breast cancer in which cancer cells collect in or around the nipple. The cancer usually affects the ducts of the nipple first (small milk-carrying tubes), then spreads to the nipple surface and the areola (the dark circle of skin around the nipple). The nipple and areola often become scaly, red, itchy, and irritated. Paget's disease of the nipple accounts for less than 5% of all breast cancer cases in the United States. Being aware of the symptoms is important, given that more than 97% of people with Paget's disease also have cancer, either DCIS or invasive cancer, somewhere else in the breast. The unusual changes in the nipple and areola are often the first indication that breast cancer is present. Doctors are not yet completely sure how Paget's disease develops. One possibility is that the cancer cells start growing inside the milk ducts within the breast and then make their way out to the nipple surface.

Features:

Paget's disease of the nipple is more common in women, but like other forms of breast cancer, it can also affect men. The disease usually develops after age 50. According to the National Cancer Institute, the average age of diagnosis in women is 62, and in men, 69.

Inflammatory Breast Cancer

Inflammatory breast cancer (IBC) is a rare and aggressive form of breast cancer. It usually starts with the reddening and swelling of the breast instead of a distinct lump. IBC tends to grow and spread quickly, with symptoms worsening within days or even hours. According to the National Cancer Institute, about 1-5% of all breast cancer cases in the United States are inflammatory breast cancers. A 2008 study found that being overweight makes a person more likely to develop IBC. The average age at diagnosis for inflammatory breast cancer in the United States is 57 for white women and 52 for African American women. These ages are about 5 years younger than the average ages at diagnosis for other forms of breast cancer. According to the American

Cancer Society, inflammatory breast cancer is more common in African American women. Like other forms of breast cancer, IBC can also affect men.

Phyllodes Tumors of the Breast

Phyllodes tumors of the breast are rare, accounting for less than 1% of all breast tumors. The name "phyllodes," which is taken from the Greek language and means "leaflike," refers to that fact that the tumor cells grow in a leaflike pattern. Other names for these tumors are phylloides tumor and cystosarcoma phyllodes. Although most phyllodes tumors are benign (not cancerous), some are malignant (cancerous) and some are borderline (in between noncancerous and cancerous). All three kinds of phyllodes tumors tend to grow quickly, and they require surgery to reduce the risk of a phyllodes tumor coming back in the breast (local recurrence).

Features:

Phyllodes tumors tend to grow quickly, but they rarely spread outside the breast. Phyllodes tumors can occur at any age, but they tend to develop when a woman is in her 40s. Benign phyllodes tumors are usually diagnosed at a younger age than malignant phyllodes tumors. Phyllodes tumors are extremely rare in men.

Breast Tests ⁷¹

Physical Exam: By examining the breast and nearby underarm tissue for lumps, skin changes, nipple discharge, or lymph nodes, a doctor can find any abnormalities in the breast. Characteristics of breast lumps, such as size, shape, texture, are usually noted.

Screening

Mammogram: A mammogram is an x-ray picture of tissues inside the breast. Mammograms can often show a breast lump before it can be felt. They also can show a cluster of tiny specks of calcium. These specks are called microcalcifications. Lumps or specks can be from cancer, precancerous cells, or other conditions. Further tests are needed to find out if abnormal cells are present. Screening mammograms are performed to detect early changes in the breast before the occurrence of clinical

symptoms. Diagnostic mammograms may focus on a specific area of the breast. They may involve special techniques and more views than screening mammograms.

Breast ultrasound: Breast ultrasound can often determine whether a lump is made of fluid (cyst) or solid material.

Breast magnetic resonance imaging (MRI scan): Breast MRIs can add additional information to mammograms and are recommended only in specific cases.

- **Biopsy:** This is a procedure to confirm diagnosis of Cancer. A small sample of tissue is taken from an abnormal-appearing area of the breast that is seen on physical exam, mammogram, or other imaging study and examined for cancer cells. A biopsy may be done with a needle or with minor surgery.
- **Fine needle aspiration (FNA) breast biopsy:** A thin needle is inserted into an abnormal-appearing area of the breast and (aspirate) fluid and breast tissue is drawn out. This is the simplest type of biopsy and is mostly used for lumps that can be easily felt in the breast.
- **Core needle breast biopsy:** A larger, hollow needle is inserted into a breast mass, and a tube-shaped piece of breast tissue (core) is drawn out. A core biopsy provides more breast tissue for evaluation than an FNA biopsy.
- **Stereotactic breast biopsy:** A surgical procedure that uses mammography to collect a tissue sample from a breast lump. Stereotactic breast biopsies use the X-rays from mammograms to locate problems within the breast. This form of breast biopsy—called stereotactic—is often used when small growths or accumulations of calcium are detected on a mammogram, but do not appear on an ultrasound.
- **Surgical biopsy:** Surgery may be recommended to take out part or all of a breast lump to check for cancer.
- **Sentinel node biopsy:** A type of biopsy in which the health care provider locates and removes the lymph node(s) that the primary tumor is most likely to spread. This type of biopsy helps determine the likelihood that a cancer has spread.

Lab Tests with Breast Tissue -

If breast cancer is diagnosed, special lab tests on the breast tissue that was removed:

Hormone receptor tests: Some breast tumors need hormones to grow. These tumors have receptors for the hormones estrogen, progesterone, or both. If the hormone receptor tests show that the breast tumor has these receptors, then hormone therapy is most often recommended as a treatment option. See the Hormone Therapy section.

HER2/neu test: HER2/neu protein is found on some types of cancer cells. This test shows whether the tissue either has too much HER2/neu protein or too many copies of its gene. If the breast tumor has too much HER2/neu, then targeted therapy may be a treatment option.

Treatment for Breast Cancer

1. Surgery :

Most women with breast cancer have some type of surgery. Surgery is often needed to remove a breast tumor. The options include Breast-conserving surgery (partial or segmental mastectomy) or Entire Breast Removal (Mastectomy) whereby all of the breast tissue is removed, sometimes along with other nearby tissues .Lymph nodes are also excised during the surgery (to determine if the breast cancer has spread to axillary lymph nodes, one or more of these lymph nodes may be removed). Other options include preventive surgeries such as prophylactic mastectomy for women at high-risk and prophylactic ovary removal to lower estrogen production in the body. Reconstructive surgery can be done to restore the breast's appearance after surgery. This surgery can be done at the same time as the mastectomy (immediate reconstruction) or at a later time (delayed reconstruction).

2. Radiation : Radiation therapy can be given in 2 main ways.

External beam radiation

This is the most common type of radiation therapy for women with breast cancer. The radiation is focused from a machine outside the body on the area affected by the cancer. The extent of radiation depends on whether mastectomy or breast-conserving surgery (BCS) was done and whether or not lymph nodes are involved. If mastectomy was done and no lymph nodes had cancer, radiation is targeted at the chest wall and the places where any drains exited the body. If BCS was done, most often the entire

breast gets radiation, and an extra boost of radiation is given to the area in the breast where the cancer was removed to prevent it from coming back in that area. The boost is often given after the treatments to whole breast end.

Internal Radiation (Brachytherapy)

Instead of aiming radiation beams from outside the body, radioactive seeds or pellets are placed into the breast tissue next to the cancer. It is often used in patients who had BCS as a way to add an extra boost of radiation to the tumor site (along with external radiation to the whole breast). It may also be used by itself (instead of radiation to the whole breast). Tumor size, location, and other factors may limit who can get brachytherapy.

3. Chemotherapy:

Chemotherapy is the use of anti-cancer (cytotoxic) drugs to treat cancer. It is usually a systemic therapy⁷³ that circulates throughout the body and destroys cancer cells, including those that may have broken away from the primary tumour.

- It may be used in following conditions:
- After surgery to destroy cancer cells left behind and to reduce the risk of the cancer recurring (adjuvant chemotherapy)
- Before surgery to shrink a large breast tumour (neoadjuvant chemotherapy).
- To treat a breast cancer recurrence
- To relieve pain or to control the symptoms of advanced breast cancer (palliative chemotherapy)

4. Hormonal therapy

Hormonal therapy is a systemic therapy that slows the growth and spread of breast cancer cells by changing hormone levels in the body, or by stopping breast cancer cells from using estrogen. Estrogen and progesterone are 2 female hormones made mainly by a woman's ovaries until menopause. After menopause, the ovaries stop making estrogen, but the body continues to make a small amount of estrogen with an enzyme called aromatase. Estrogen and progesterone can stimulate the growth of some breast cancers. Hormonal therapy is used only in women who have breast cancer that

is estrogen receptor positive (ER positive or ER+) and progesterone receptor positive (PR positive or PR+). Hormonal therapy is not used in women who have hormone receptor–negative tumours.

Hormonal therapy may be used:

- After surgery and radiation therapy to stop cancer cells that may have been left behind from growing and to reduce the risk of the cancer recurring (adjuvant hormonal therapy)
- Before surgery, to shrink the primary tumour, especially in older women with breast cancer that is ER+, PR+ or both
- As part of a combined treatment approach for locally advanced breast cancer
- To decrease the chance of cancer developing in the opposite breast
- To treat breast cancer that has recurred
- To relieve pain or to control the symptoms of metastatic breast cancer (palliative therapy)

The following are the most common hormonal therapies used to treat breast cancer:

Anti-estrogens: Work by stopping breast cancer cells from getting estrogen. Anti-estrogens bind directly to and block the estrogen receptors.e.g Tamoxifen

Aromatase inhibitors: Aromatase is an enzyme involved in the production of estrogen in the body. Aromatase inhibitors are drugs that stop the production or block the actions of aromatase, which in turn lowers the level of estrogen in the body. E.g letrozole (Femara), anastrozole (Arimidex)

Ovarian ablation: Ovarian ablation (or ovarian suppression) refers to treatments that stop the ovaries from making estrogen. Reducing the level of estrogen made in the body helps prevent and stop breast cancer cells from growing. Ovarian ablation can be done in one of 3 ways: surgery, drugs (luteinizing hormone–releasing hormone agonists) or radiation therapy.

TNM Staging⁷³

TMN staging takes into account the size of the tumour (**T**),

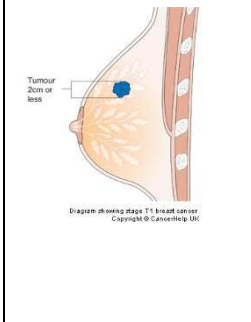
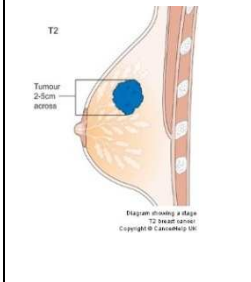
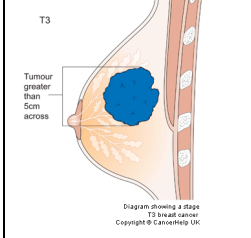
Whether the cancer has spread to the lymph glands (lymph nodes) (**N**),

Whether the tumour has spread anywhere else in the body (**M** – for metastases).

TNM results together to give you your overall stage

Table 2. TNM Staging

Fig.9 The T stages (tumour)

	TX means that the tumour size cannot be assessed
	Tis means <u>DCIS</u>
	<p>T1 – The tumour is 2 centimetres (cm) across or less</p> <p>T1 is further divided into 4 groups</p> <p>T1mi – the tumour is 0.1cm across or less</p> <p>T1a – the tumour is more than 0.1 cm but not more than 0.5 cm</p> <p>T1b – the tumour is more than 0.5 cm but not more than 1 cm</p> <p>T1c – the tumour is more than 1 cm but not more than 2 cm</p>
	<p>T2 – The tumour is more than 2 centimetres, but no more than 5 cms across</p>
	<p>T3 – The tumour is bigger than 5 centimetres across</p>

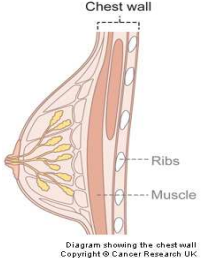
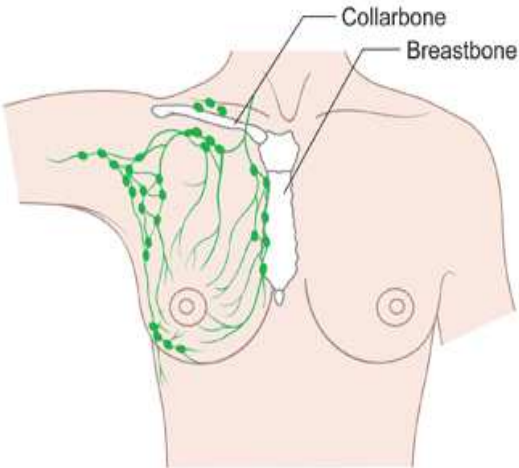
	<p>T4 is divided into 4 groups</p> <p>T4a – The tumour has spread into the <u>chest wall</u></p> <p>T4b – The tumour has spread into the skin and the breast may be swollen</p> <p>T4c – The tumour has spread to both the skin and the chest wall</p> <p>T4d – Inflammatory carcinoma – this is a cancer in which the overlying skin is red, swollen and painful to the touch</p>
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Fig.10 The N stages (nodes)

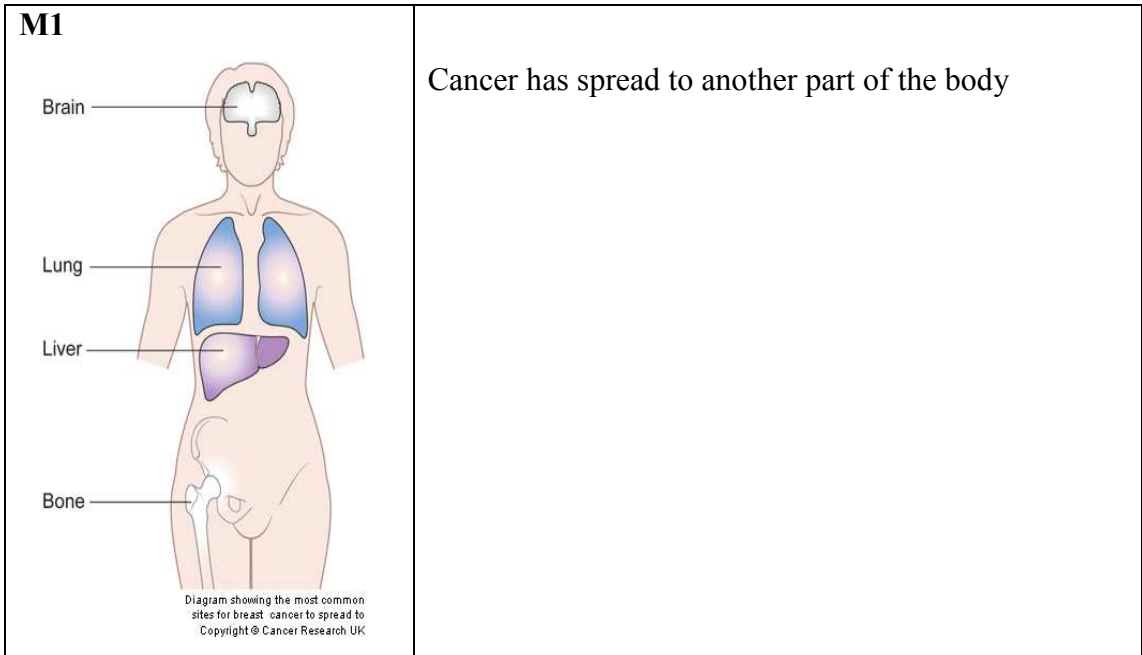
NX	the lymph nodes cannot be assessed (for example, if they were previously removed)
N0	No cancer cells found in any nearby nodes
N1	Cancer cells are in the upper levels of lymph nodes in the armpit but the nodes are not stuck to surrounding tissue
pN1mi	One or more lymph nodes contain areas of cancer cells called micrometastases that are larger than 0.2mm or contain more than 200 cancer cells but are less than 2mm
N2	<p>divided into 2 groups</p> <p>N2a – there are cancer cells in the lymph nodes in the armpit, which are stuck to each other and to other structures</p> <p>N2b – there are cancer cells in the lymph nodes behind the breast bone</p>

	(the internal mammary nodes), which have either been seen on a scan or felt by the doctor. There is no evidence of cancer in lymph nodes in the armpit
<p>N3</p>  <p>Diagram showing the position of the collarbone and breastbone Copyright © Cancer Research UK</p>	<p>divided into 3 groups</p> <p>N3a – there are cancer cells in lymph nodes below the collarbone</p> <p>N3b – there are cancer cells in lymph nodes in the armpit and behind the breast bone</p> <p>N3c – there are cancer cells in lymph nodes above the collarbone</p>

Isolated tumour cells (ITCs) are small clusters of cancer cells less than 0.2 mm across, or a single tumour cell, or a cluster of fewer than 200 cells in one area of a lymph node. Lymph nodes containing only isolated tumour cells are not counted as positive lymph nodes

Fig.11 The M stages (metastases)

M0	There is no sign of cancer spread
cMo(i+)	There is no sign of the cancer on physical examination, scans or X-rays but cancer cells are present in blood, bone marrow, or lymph nodes far away from the breast cancer – the cells are found by laboratory tests



Grade (The Bloom–Richardson grading system) :-

The grading of a cancer in the breast depends on the microscopic similarity of breast cancer cells to normal breast tissue, and classifies the cancer as well differentiated (low grade), moderately differentiated (intermediate grade), and poorly differentiated (high grade), reflecting progressively less normal appearing cells that have a worsening prognosis. Although grading is fundamentally based on how biopsied, cultured cells behave, in practice the grading of a given cancer is derived by assessing the cellular appearance of the tumor. The closer the appearance of the cancer cells to normal cells, the slower their growth and the better the prognosis. If cells are not well differentiated, they will appear immature, will divide more rapidly, and will tend to spread. Well differentiated is given a grade of 1, moderate is grade 2, while poor or undifferentiated is given a higher grade of 3 or 4 (depending upon the scale used).

The Nottingham (also called Elston-Ellis) modification of the Scarff-Bloom-Richardson grading system is recommended, which grades breast carcinomas by adding up scores for tubule formation, nuclear pleomorphism, and mitotic count, each of which is given 1 to 3 points. The scores for each of these three criteria and then added together to give an overall final score and corresponding grade as follows.

The grading criteria are as follows:

A. Tubule formation -

This parameter assesses what percent of the tumor forms normal duct structures.

1 point: tubular formation in more than 75% of the tumor

2 points: tubular formation in 10 to 75% of the tumor

3 points: tubular formation in less than 10% of the tumor

B. Nuclear pleomorphism -

This parameter assesses whether the cell nuclei are uniform like those in normal breast duct epithelial cells, or whether they are larger, darker, or irregular (pleomorphic).

1 point: nuclei with minimal variation in size and shape

2 points: nuclei with moderate variation in size and shape

3 points: nuclei with marked variation in size and shape

C. Mitotic count -

This parameter assesses how many mitotic figures (dividing cells) the pathologist sees in 10 microscope fields. One of the hallmarks of cancer is that cells divide uncontrollably. The more cells that are dividing, the worse the cancer.

1 point: 0-9 mitotic counts per 10 fields under X25 objective using the Leitz Ortholux microscope, 0-5 mitotic counts per 10 fields under X40 objective using the Nikon Labophot microscope, or 0-11 mitotic counts per 10 fields under X40 objective using the Leitz Daiplan microscope

2 points: 10-19 mitotic counts per 10 fields under X25 objective using the Leitz Ortholux microscope, 6-10 mitotic counts per 10 fields under X40 objective using the Nikon Labophot microscope, or 12-22 mitotic counts per 10 fields under X40 objective using the Leitz Daiplan microscope

3 points: Over 19 mitotic counts per 10 fields under X25 objective using the Leitz Ortholux microscope, over 10 mitotic counts per 10 fields under X40 objective using

the Nikon Labophot microscope, or over 22 mitotic counts per 10 fields under X40 objective using the Leitz Daiplan microscope.

D. Overall grade -

The scores for each of these three criteria are added together to give a final overall score and a corresponding grade as follows:

- 3-5 **Grade 1** tumor (**well-differentiated**). Best prognosis.
- 6-7 **Grade 2** tumor (**moderately-differentiated**). Medium prognosis.
- 8-9 **Grade 3** tumor (**poorly-differentiated**). Worst prognosis.

Lower grade tumors, with a more favorable prognosis, can be treated less aggressively, and have a better survival rate. Higher grade tumors are treated more aggressively, and their intrinsically worse survival rate may warrant the adverse effects of more aggressive medications.

AAHAR

Definition of Aahar

What can be eaten is called 'Aahar'. Aahar is the cause of life. It is also responsible for bala(strength),varna(glow) and ooja(vitality)⁷⁴.

Aahar Prashasti (Importance of Aahar)

In Taittiriya Upanishad importance of food and its relation to man has been described thus: From this Atmana has sprung Aakash, From Aakash - Vayu, From Vayu - Agni, from Agni-Aapa(water), from Aapa-Prithivi. From Prithivi - oshadhi (vegetation). From vegetation - foods. From food man exists. Thus man is constituted of the essence of food⁷⁵.

Aahar is excellent means for maintenance of life⁷⁶.

Aahar is the cause of creation, sustenance and destruction for humans and gods alike. Due to aahar, growth of body and mind, physical and mental strength, health, glow of the skin and proper functioning of the indriyas (special senses) is attained. Due to imbalance in the aahar diseases are caused. In short, everything is dependent on aahar⁷⁷.

Aahar is mentioned as one of the Traya Upastambha (Three subordinate pillars)⁷⁹. Acharyas referring the body as abode of atma describe the functioning of the body. Body comprises of three main elements viz. Vata ,Pitta, Kapha. These three when in equilibrium maintain the body functions of the lower, middle and upper body respectively ,just as the the pillars of the house hold it together or support the structure. Hence many learned acharyas call the body as 'Tristhuna'. When these doshas are vitiated they cause destruction of the body⁷⁸.

Aahariya Nidan of Arbuda – (Dietary factors in causation of Arbud)

Factors responsible in Pathogenesis of Arbud

Dosha – Vata,Pitta, Kapha

Dushya –Rasa-Rakta⁵⁰, Mansa⁵¹.Meda⁵²

Agni – Dhatvagni dushti

Srotasa – Rasavaha,Raktavaha, Mansavaha srotasa⁵³,Medovaha

Marg –Bahya roga marga⁵⁴

Sthana – Anywhere in the body.

Considering these factors it can be summarised that aahar which causes aggravation of the three doshas and vitiation of Rasa, Rakta, Mansa & Meda are risk factors for causing arbud. Stana is the abode of Stanya. Stanya is mentioned as upadhatu of Rasa hence, aahar which causes dushti of stanya or Stana is also responsible in pathogenesis of Stanarbud.

Samanya Dosha prakopak Aahar in causation of Diseases^{80, 81}:

Table 3.Doshaprakopak Aahar

According to Guna:

	Vataprakopak	Pitta prakopak	Kaphaprakopak
Rasa	Tikta-Katu-Kashaya	Katu-Amla-Lavana	Madhur-Amla-Lavana
Veerya	Sheeta	Ushna	Sheeta
Guna	Laghu,Ruksha	Tikshna,Laghu	Snigdha , Picchila ,Guru
Karma	Vishtambhi	Vidahi	Abhishyandi

According to Dravya:

	Vataprakopak	Pitta prakopak	Kaphaprakopak	Sarvadoshaprakopak
Shuka	Truna dhanya Varak		Navanna,Godhum	
Shimbi	Kalaya,Chanak ,Mudga , Masur, Aadhaki,Nishpav a	Kulattha,Masha,N ishpava,Sarshapa, Atasi Tila	Navanna,Masha	

	Vataprakopak	Pitta prakopak	Kaphaprakopak	Sarvadoshaprakopak
	Viruddhaka			
Mansa	Shushka Mansa	Godha, Matsya, Aja, Avik	Anup Mansa,Jaliya Mansa, Vasa	Shushka Mansa
Shaka	Bisa, Shaluka Shushka Shaka			Aama Mulak,Sarshapa, Shusha Shaka,
Phala	Jambu, Tinduk Karir, Tumba, Kalinga,Chirbhit	Pilu,Bhallaka,Ra w Amrataka, Amlika , Maricha, Amla Phala	Kadali, Kharjur,Bhavya,N arikela, Madhur Phala	Lakucha, Aama Phala
Haritaka		Harita Shaka		
Madya		Shukta –Shandaki madya,sauviraka, Sura		Dushit Madya , yava sura
Jala			Ati jala prashana	Dushit jala
Gorasa		Mastu,Dadhi, Takra,Kurchika, Mastu,	Aama Kshira,Kilata ,Morata,Kurchika, Takra ,Piyush, Dadhi,Dugdha	Mandak Dadhi
Ikshu			Ikshurasa,Phanita, Guda	
Krutann a		Dhanyamla, Pinyaka, Atyamla Kanjika(Katvara)	?Pindaka ,Pruthuka,Sthula anna, Bhakshya, Shashkuli(Kachori) ,Krushara, Kheer	Pinyaka
Aaharop ayogi		Taila,Tila taila		

According to Ashana Padhati

Ashana Paddhati	Vataprakopak	Pittaprakopak	Kapha Prokopak	Sarvadoshaprakopak
Ashana Vichara	Heena Bhojana Pranita Bhojana Trushnasamayi Bhojana Upavasa Vishamashana		Samashana Adhyashana	Anashana Ati Bhojana Adhyashana Samashana Vishamashana Viruddhashana Sankirna Bhojana Anna parivartana

Since Arbud is caused due to vitiation of Rakta, Mansa, Meda dhatu, aahar which is responsible for vitiation of its srotasas is also important.

Table 4. Raktadushatikara Aahar⁸²-

Rasa	Amla (sour), Lavan (salt),Katu rasa
Guna	Drava, Snigdha, Guru
Shimbi	Kulattha, Masha, Nishpava,Pindalu, Mulak
Mansa	Jalaj, Anup mansa
Haritaka	Ardrak, Jambir, Surasa, Ajmoda, Shigru, Rajika, Dhanyak, Grunjanaka
Jala	Atijala sevan
Gorasa	Dadhi, dadhi Mastu
Aaharopayogi	Kshara
Ashana Vichar	Viruddhashana, durgandhita Aahar, Atyashana, Ajeerna, Adhyashana

- **Rasavaha Srotasa⁸³**
- Guru aahar(food which is heavy to digest)
- Sheeta aahar(Cold food - in potency & Thermally)

-
- Ati snigdha (Fatty diet, food having excessive amount of Fats)
 - Atyashana(overeating)
 - Samashana (Having wholesome and unwholesome food together)
- **Raktavaha Srotasa**⁸⁴
 - Vidahi Aahar (Food which causes irritation to the mucosa/causes burning sensation)
 - Snigdha aahar(Fatty diet, food having excessive amount of Fats)
 - Drava Aahar (Excessive intake of Liquids)
- **Mansavaha Srotasa**⁸⁵
 - Abhisyandi Aahar (channel blocking food / food causes blockage in the channels)
 - Sthula Aahar (Bulky diet e.g- Laddoo)
 - Guru aahar(food which is heavy to digest)
- **Medovaha Srotasa**⁸⁶
 - Medya Aahar (Fatty foods, oily food)
 - Varuni Atisevan (Excessive intake of Alcohol)

Characteristics of Arbud –

Arbud bears resemblance with granthi and shotha. Arbud is bigger than granthi⁵⁵. Has the predominance of kapha dosha and meda dhatu ,is sthira (fixed/hard) hence does not suppurate⁵⁵. Charakacharya mentions arbud similarity with shotha with respect to elevation.⁵⁶

Aahariya Nidan of Arbuda –(Specific dietary factors in causation of Arbud)

The causation of mansaja granthi is specified as excessive use of mansavardhak aahar (consumption of meat) . Medoja granthi is caused by excessive intake of medovardhak aahar (fatty food)⁸⁷.

Dietary causes of Shotha are mentioned as follows^{88, 89, 90, 91}

Aahar Hetu for Shotha

Excessive intake of following:

Rasa	Amla (sour), Lavan (salt)
Guna	Guru, Snigdha, Sheeta, Teekshna, Ushna
Shuka	Navanna
Shimbi	Viruddhaka
Mansa	Gramya Mansa, Shushka Mansa
Shaka	Amla shaka
Phala	Amla Phala
Haritaka	Ardrak, Jambir, Surasa, Ajmoda, Shigru, Rajika, Dhanyak, Grunjanaka
Jala	Jala
Gorasa	Dadhi, Mandak
Krutanna	Pishtanna, Raga
Aaharopayogi	Kshara

Dietary Causes in Vitiatiion of Stanya⁹²

Rasa	Lavan (salt), Katu (Hot and Spicy)
Karma	Abhishyandi
Shuka	Navanna
Shimbi	Viruddhaka
Mansa	Mansa sevan
Haritaka	Ardrak, Jambir, Surasa, Ajmoda, Shigru, Rajika, Dhanyak, Grunjanaka
Madya	Madya sevan
Gorasa	Dadhi, Mandak
Ikshu	Gur (Jaggery)
Krutanna	Paramanna, Sweets prepared in oil or ghee
Aaharopayogi	Kshara
Ashana	Praklinna Bhojan

Prakara	Asatmya Bhojan Vishamashana Viruddhashana Atyashana
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Literature Review of the Causative Factors:

Rasataha

Amla Ras –Atiyog^{93, 94, 95} –

Mahabhuta	Prithvi + Agni
Guna- Karma	Laghu , Snigdha ,Ushna, Vyavayi
Action on Doshas	Kapha vilayana , Pitta vardhak
Action on Dhatus	Hrudya(appeasing to the Heart), Rakta dushaka(vitiates Blood), Mansa vidahana(causes irritation in muscular tissue), Dhatu Shaithilya(causes flaccidity)
Action on Malas	Danta harsha (Sensitive Teeth),Looma sanvejana(Causes goosebumps), Akshisammilana(causes involuntary blinking of the eyes)
Causation in Diseases	Vrana Bheda(bursting open of wounds),Trushna(excessive thirst), Vrana paka(suppuration of wounds),Kantha-Urah daha (Burning sensation in throat and chest region). Kandu(Itching), Anaemia, Visarpa, Rakta-pitta, Shotha(swelling), Bhrama (vertigo)

Lavan Rasa Atiyog^{96, 97, 98} –

Mahabhuta	Jala + Agni
Guna –Karma	Not too heavy, Vyavayi,Vikashi, Sara,Snigdha, Tikshna, Ushna, Sarvarasa nashak
Action on Doshas	Pitta prakop(aggrevation of pitta dosha),
Action on Indriyas	Indriya uparodha(reduced functioning of senses)
Action on Dhatus	Raktavruddhi(increase in rakta dhatu), Mansa kotha (decomposition of mansa), Decrease in shukra (semen)

	Balakshaya(Reduced strength), Oojanasha (reduction in vitality)
Action on Malas	Danta harsha(Sensitive Teeth)
Causation in Diseases	Trushna (excessive thirst), Tapavruddhi(Increase in body temperature), Kushtha (skin disorders), Vali(wrinkles), Palita(Premature ageing), Visha (increases toxins) , Vranabheda(Bursting open of wounds)(ch) Murccha(fainting), Shotha(oedema), Alopecia ,Rakta-pitta, Amlapitta,Visarpa, Vata-rakta, Vicharchika (skin disorders),Indralupta(ch), Kotha(urticaria) (su), Gatrakandu (itching),skin discoloration, Mukhapaka(stomatitis), Akshipaka(suppuratation at the eye),Kitibha, Akshepa(convulsion),Mada ,Kshata (causes lacerations)(vagbhat)

Katu rasa – Atiyog^{99, 100, 101}

Mahabhuta	Vayu+ Agni
Guna –Karma	Laghu, Ushna,Teekshna, Ruksha
Action on Doshas	Vata vardhak , Pitta vardhak
Action on Indriyas	Saada(listlessness),Glani(dizziness),Tama(daze) Bhrama(vertigo), Talu shosha(dryness of the palate region), Jihva shosha (dryness of the lips)(su)
Action on Dhatus	Shukranaasha (azoospermia),Karshana(reduces dhatus)
Causation in Diseases	Moha, Glani,Karshya,Murccha,Kantha daha, Toda, Bheda(, pricking sensation, piercing pain),Trushna, , Daha , Vata vikara related to Hands –Legs-Flanks-Back.

Gunataha:

Aahar with respect to Guna-

Of the 20 gunas mentioned the following gunas have dominance in aggravation of doshas.

Sheeta guna¹⁰² – Increases Kapha & Vata dosha and alleviates Pitta dosha. It is Prahladana (appeasing to the mind), Vishyandana (restricts the flow of fluids), Sthirakarana (gives steadiness to the body), Prasdana (pacifies Rakta and Pitta dosha), Kledana (keeps the body cells moist), Jeevan (imparts life), Stambhana, Guru, Balya (gives strength).

Ushna Guna¹⁰³ - Alleviates Kapha and Vata, Aggravates Pitta dosha. Dahana (cause irritation), Pachana (speed up reactions like suppuration), Murchana (lack of consciousness), swedana (causes sweat), Vamana, Virechana (increases bowel peristalsis), vilayana (causes liquefaction), causes Bhrama (dizziness), Trushna (excessive thirst)

Laghu guna¹⁰⁴ - Increases Vata Dosha. Of the six rasa Tikta rasa is the most laghu rasa. Though it creates lightness in the body excessive intake of these dravyas can cause reduction in the dhatus, emaciation, lack of strength.

Guru guna¹⁰⁵ – Increases Kapha dosha. Guru guna is necessary for strengthening and nourishment. But in excess it can cause inertness, heaviness, Lack of appetite, obesity etc.

Tikshna guna¹⁰⁶ - Pitta dosha. Teekshna guna has a piercing action. It is necessary for penetration. But in excess it causes irritation to the tissues. It can deepen the wounds. It makes a person thin.

Snigdha guna¹⁰⁷ – Increases Kapha dosha. This guna is necessary for the softness of srotasas for smooth functioning. But in excess it can cause flaccidity in the dhatus and hamper their functioning. It is responsible for causing obesity.

Picchila Guna¹⁰⁸ – Increases Kapha dosha. It increases the dhatus, has the quality of binding the elements. In excess it can increase the production of dhatus, can cause

obstruction in organs disrupting their functions or cause coating in the hollow organs like arteries.

Drava Guna¹⁰⁹ – Increases Pitta dosha, Kapha dosha (increases secretions) and Rakta dhatu. It maintains moisture in the body elements. Increases the drava mala-i.e. mutra and sweda and helps in their excretion. In excess this guna causes agnimandya, increases kapha secretions thereby increases the flaccidity of dhatus.

Sheeta, Ushna, Laghu, Guru, Teekshna and Snigdha are mentioned as veerya by Charakacharya. Veerya means potency. These gunas possess power to exert their effect on the body.

Vidahi

Daha (burning sensation which is contrary or extremes causing irritation is termed as 'vidaha'¹¹⁰.

Dravyas which cause amlodgar (sour belching), daha (burning sensation), trushna (excessive thirst), gets digested with difficulty and aggravates pitta dosha are termed as 'Vidahi'^{111, 112}.

Due to the characteristic of dravya and guru gunait gets digested slowly. It causes pitta prakop and daha (gastric irritation)¹¹³.

Abhishyandi

Abhishyandi dravyas cause ardrata (moisture), kleda (stickiness), and excessive secretions. It causes upalepa (coating). Due to abhishyandi dravyas srotasas get vitiated causing srotas dushti (vitiating of channels), increasing secretions and vitiated kapha dosha. e.g. of abhishyandi dravya – Dadhi, matsya etc^{114, 115, 116, 117}.

Dravyataha:

Navanna^{118, 119} –

Guna – Karma – Madhur, Guru, Snigdha, Vishtambhi, Abhishyandi
Action on Doshas – Vatashamak, Kaphavardhak

Pathya –Raktapitta

Grains which have been freshly cut and stored are abhisyandi¹²⁰.

\Yava(barley), godhum(wheat),Til(sesame seeds) and Masha(black gram) are exception to this rule. They are to be used freshly cut. Since if they are kept for a long time they lose their taste, become ruksha(dry) and lack nutrition.(Bh.Prakash)

Viruddhaka

Viruddhaka or sprouts create vidaha(irritation to the mucosa),are guru(heavy to digest), Vishtambha (cause flatulence) and are harmful for the eyes¹²¹.

Viruddhaka Bhakshya (Apathya Bahkshya made from sprouted beans)¹²²

Guna – Guru,Vidahi,Ruksha

Action on Doshas – Vata vardhak, Pitta vardhak

Action on Dhatus – Drushtipradushak(harmful for the eyes)

Mansa –

Gramya Mansa¹²³

Guna-Karma – Madhur, Deepana

Action on Doshas – Vata shamak, Pittavardhak, Kaphavardhak

Action on Dhatus – Bruhan (nourishes the body),
Bala(gives strength)

Anup Mansa^{124, 125}

Anup Mansa is of five types.

I.Kulachara - which reside near the banks or shore.

Guna – Madhur, Sheeta, Madhur, Snigdha

Action on Doshas – Vatashamak, Pittashamak, Kaphavardhak

Action on Dhatus –Balavardhak, Vrushya(increases semen)

Action on Malas - Increases mutra (urine)

Gavya^{126, 127}

Guna – Madhur, Ushna , Madhur, Guru,Snigdha

Action on Doshas – Vata shamak, Pitta vardhak, Kapha vardhak

Action on Dhatus – Bruhan, Balya, and Vrushya (increases semen)
Pathya – Shushka kasa (dry cough), Atyagni (excessive hunger),
Fever, Peeenas (chronic sinusitis), Krusha (emaciated),
Shwasa (breathlessness), Arochaka (lack of taste)

Mahisha ^{128, 129}

Guna -Kashaya – Madhur, Ushna, Madhur ,Snigdha, Guru
Action on Dhatus – Tarpak, Vrushya(increases semen),Stanyavardhak,
Balavardhak (increases strength) , increases muscle power.

Varaha ^{130, 131}–

Guna – Madhur, Ushna, Amla, Guru, Snigdha, Ushna
Action on Doshas – Vata shamak
Action on Dhatus –Tarpana, Balya, Bruhana, Shukravardhak
Action on Malas – Swedana

II. Plava ¹³²- which swim in water

Guna – Madhur, Sheeta, Snigdha
Action on Dhatus – Vrushya (increases semen)
Action on Malas – Increases Mutra and purish (faeces)

III .Koshatha – which are found in shells

IV. Padin ¹³³ – which are in water and have legs

Guna - Madhur, Sheeta, Madhur, Snigdha
Action on Doshas – Vatashamak, Pittashamak, Kaphavardhak

V. Matsya ¹³⁴– Fish

Guna – Madhur ,Ushna , Madhur , Snigdha, Guru, slightly
Laghu(seawater fish)

Action on Doshas – Pitta vardhak, Sea water fish is Agnivardhak
(increases appetite)

Action on Dhatus – Bruhan (nourishing), Balya(strengthening),
Vrushya (increases semen)

Fish found in very salty sea is Drushtinashak(harmful for sight)

Action on Malas – sangrahi(creates constipation)

Anup varga mansa is described as Mahaabhishtyandi ¹³⁵.

Shushka Mansa ^{136, 137} –

Guna – Guru(heavy to digest).

Action on Doshas – Vatavardhak, Pittavardhak

Action on Dhatus – Creates Aruchi (lack of taste), Avrushya(decreases semen)

Apathya – Pratishtyaya (cold)

Haritaka ¹³⁸ –

Pippali, Maricha, Shunthi, Hingu, Jeerak, Dhanyak, Jambir(lime), Surasa(Tulsi),
Bhustruna(Lemon grass), Sarshap (mustard seeds)Shigru(Drumsticks),
Mulak(Raddish), Palandu(Onion) are many a times used as vegetable or for
tempering.

Guna –Katu, Ushna, and Ruchya (enhances taste)

Action on Dosha – Vatashamak, Kaphashamak

Grunjanak

Guna-Karma –Teekshna

Action on Doshas –Vatashamak, Pittavardhak, Kaphashamak

Action on Malas – Swedajanak (induces sweat)

Pathya – Arsha

Jala Sevan Vidhi (Rules for intake of Water) ¹³⁹

Before having water it should be analysed in these 5 ways -Kevala (in totality) ,
Saaushadhi(with medicines), Pakva(boiled) & Ushna(warmth) and hitakara

(beneficial) . Water thus analysed should be had in proper quantity. This way it acts like amrit (life-saving) or else it acts like visha (poison).

Atijala sevan ¹⁴⁰-

While having food water should be sipped in between the meals. Having too much water or not having it at all can hamper digestion. Too much water reduces the gastric fire and too little water can hamper digestion since the digestive juices are not produced in required quantities thus causing ajirna (indigestion).

In Diseases -

Intake of jala should be restricted in Aroochi (lack of taste), Pratisyaya(cold), Praseka (excessive salivation), Swayathu (oedema), Kshaya, Mandagni (reduced appetite), Udara (Ascites), Kushtha(skin diseases), Jwara(fever), Netraroga(Eye disorders), Vrana(wounds) and Madhumeha(diabetes) ¹⁴¹ .

Since jala is opposed to agni too much of water intake reduces the gastric fire.

A person whose doshas are imbalanced, whose immunity is reduced due to disease should not drink water without boiling, since it can increase all the three doshas ¹⁴² .

A person with reduced appetite should also not drink cold water. In diseases like Abhishyanda, Pleeha(splenomegaly), Vidradhi(abscess), Gulma, Pandu(anaemia), Udara(ascites),Arsha(piles), Atisaara(diarrhea) ,Grahani(colitis), Shosha and Shopha(oedema) one should restrict water as far as possible but if need arises he should have medicated water. Even in health he should have less water except in Sharad rutu and Grishma rutu ¹⁴² .

Water acts as a medicine in indigestion, if taken after the food gets digested it increases strength, if taken in-between acts like nectar and if taken immediately after having food it acts like poison ¹⁴³ .

Dadhi –

Properties ¹⁴⁴–

Guna - Madhur (Sweet) or Amla (sour) or extremely Amla (sour)
Anurasa - is kashaya (astringent), Ushna, Amla, Snigdha
(unctuous)

Action on Doshas	– Kapha vardhak (madhur dadhi), Abhishyandi (madhur dadhi)
Action on Dhatus	– increases Meda dhatu (madhur dadhi)
Pathya	- Peenasa (sinusitis), Visham jwara (fever), Atisaar, arochaka(lack of taste), Mutrakrucchra(difficulty in micturition) and emaciated person.

Out of the three types madhur dadhi is very abhshyandi

Amla dadhi is aggravates Kapha and Pitta while extremely Amla Dadhi vitiates Rakta dhatu ¹⁴⁵.

MandakDadhi (Dadhi which is not well formed) is vidahi (irritates the body tissues / causes burning sensation, causes increase in the malas –Purish and Mutra and is tridosha prakopak (increases all the three doshas simultaneously) (su.su 45/66)

Mastu – The liquid/ watery part of Dadhi is guru(heavy to digest), Vrushya (increases semen),diminishes agni (gastric fire) and increases Kapha and shukra(semen).

Pishtaka (Fooditems made from rice flour) ¹⁴⁶

Guna	– Ushna, Guru, Vidahi
Action on Doshas	- Kaphavardhak, Pitta vardhak
Action on Dhatus	– Does not give bala

Bhakshya prepared in Ghrut (clarified butter) ¹⁴⁷

Guna	– Sugandhi, Laghu
Action on Doshas	– Vatashamak, Pittashamak
Action on Dhatus	–Hrudya,Varnaprasadak, Balya, Drushtiprasadak

Bhakshya prepared in Taila(oil) ¹⁴⁸

Guna	– Ushna , Katu, Vidahi, Guru
Action on Doshas	– Vatashamak,Pitta vardhak
Action on Dhatus	– Twak dushak, Drushti dushak

Raga (accompaniments like Chutni, sauces) ^{149, 150} _

Guna	– Katu, Amla, Madhur, Lavan, Laghu
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Action on Dhatus	– Hrudya (appeasing to the heart), Balya (gives strength), and Vrushya (increases semen)
Pathya	– Trushna (excessive thirst), Murccha (giddiness), Bhrama (vertigo), Chhardi(vomiting),Shrama(fatigue).
Effects	– Imparts taste, Hrudya (beneficial for the heart, pleases the senses), Deepana (increases appetite),

Kshara ¹⁵¹ -

Guna –Karma	– Ushna, Teekshna, Laghu. Pachana (suppuration), Dahana (irritation), Bhedana (penetration). Initially causes kledana and then shoshana (Increases secretions in the body and later causes depletion).
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Action on Dosha

-Dhatu-Malas	–Harmful effects on Kesha (hair), Akshi (eyes), Hrudaya (heart), Shukra (reduces semen) If used in excess it causes Andhya (blindness), Shandhya (infertility), Khalitya (alopecia) and Palitya (untimely greying of hair)
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Aahar Hetu with respect to Aashana padhati

Definition ^{152, 153}

Samashana - Mixing hitakaradravya and Ahitakaradravya together is defined as ‘Samashana’.

Vishamashana - 1. Eating very less or sometimes in excess (overeating)

2. Having food at irregular timings

Food if taken in excess or if taken in irregular quantity i.e sometimes less sometimes more and also if food is taken at irregular time it is termed as ‘Vishamashana’.

Vishamashana with respect to kala ^{154, 155} -

Having food at irregular timings - Avoid eating in Aprapta kala (when one is not hungry) or Ateetakala (after the sensation of hunger has subsided). If one eats in apraptakala he is liable to suffer from Ajeerna (indigestion), Visoochika or sometimes may meet death. Food eaten in ateetkala becomes difficult to digest since increased

vata dosha destroys the pachakagni (digestive fire). Thus the food does not get digested properly and the person does not have urge to eat.

❖ **Vishamashana with respect to Matra(quantity)**

Aahar Matra is defined as the quantity of food which does not impede in prakruti and which gets digested easily is termed as aahar matra for that particular individual ¹⁵⁶.

Matra according to the prakruti of dravya

Dividing stomach into three parts Guru dravya should be taken half the quantity, while laghu dravya should not be eaten too much ¹⁵⁷.

Aahar matra is one of the important factors to be taken into consideration A person should always eat food in proper quantity. This quantity is dependent on agni (gastric fire) and aahar dravya(food substance) ¹⁵⁸.

Signs of Matratvat Aahar (properties of food which is eaten in proportion) ¹⁵⁹

- Doesn't exert pressure on the flanks
- Doesn't put pressure on the heart
- Doesn't cause heaviness in the abdomen
- Imparts smooth functioning of the senses
- Gives a feeling of satiety
- Does not impede activities like standing, sitting, walking, breathing, talking etc.
- Gets easily digested in four yama,
- Gives strength, improves complexion

Amatra or improper quantity is of two variations ¹⁶⁰

1. Heena Matra - Having food in less quantity than required for the body nourishment
2. Ati Matra - Having food in more quantity than required for the body nourishment

Ati Matra ^{161, 162}

Food taken in excess quantity on the other hand causes aggravation of all the doshas. A person who fills his stomach with guru dravyas and then has liquids like milk upto his capacity creates imbalance in the tri-doshas. Due to overeating these doshas reside in a part of stomach and vitiate the food ingested. These aggravated doshas and vitiation of aahar causes symptoms according to the aggravation of doshas.

Symptoms caused due to aggravated Vata Dosha –

Shula(pain), Aanaha(Abdominal distention), Angamarda(Bodyache), Mukhshosha (Dryness of mouth), Murccha (syncope), Bhrama(dizziness), Agnivaishamya (disturbance in digestion), Stiffness in the chest & back muscles, constriction in the sira (veins).

Symptoms due to aggravated Pitta Dosha – Jwara(fever), Atisaara(diarrhoea), Antardaha(irritation or burning sensation in the body), Trushna(Excessive thirst), Mada, Bhrama(vertigo), Pralapa(irrelevant talk)

Symptoms due to aggravated Kapha Dosha – Vaman (vomiting), Aroochaka (Lack of taste), Avipaka (indigestion), Sheeta jwara (fever with chills), Aalasya (laziness), Gatra gaurav (feeling of heaviness).

It creates obstruction in the channels and cause ‘Alasaka’. Sometimes these doshas cause vomiting or diarrhoea ‘Visoochika’.

Eating very less or sometimes in excess (overeating) is called as ‘Vishamashana’. Food if eaten in less quantity does not give a feeling of satiety, reduces strength, causes emaciation. Food eaten in excess causes alasya (lethargy), Gaurav (feeling of heaviness), Aatopa and agnimandya(lack of appetite) ^{163, 164}.

Viruddhashana –

Any Dravya (food or medicine) which aggravates the doshas but do not eliminate them from the body is harmful to the body. These dravyas act against the functioning of the dhatus ^{165, 166}

Any Dravya which is opposite to ¹⁶⁷

1.Desha	2.Kala	3. Agni	4. Matra	5. Satmya	6. Vata-Pitta- Kapha dosha
7.Sanskara	8. Veerya	9. Koshta	10. Avastha	11. Krama	12. Parihar
13. Upachar	14. Paka	15. Samyog	16.Hrudaya	17. Sampat	18. Vidhi are not beneficial for health

Viruddhashana Prakar

1. **Desha** Contradictory food with respect to Land
Viruddha¹⁶⁸ E.g Ruksha (dry) and Teekshna (penetrating) dravyas in jangal desha, snigdha (unctuous) and sheeta (cold) food in Anup desha.
2. **Kala** Contradictory food with respect to Kala(time)
Viruddha¹⁶⁹ E.g. Cold and Dry food in Cold weather
Katu (Hot & Pungent food) in Hot weather
Eating Sattu(roasted flour of Horsegram and wheat) at night
Madhu should not be had in grishma rutu
3. **Agni** Contradictory food with respect to Appetite
Viruddha¹⁷⁰ E.g Excessive eating in Mandagni, Eating less food in Teekshnagni
4. **Matra** Contradictory food with respect to Matra(Quantity)
Viruddha¹⁷⁰ E.g. Mixing Madhu(honey) and Ghrut(ghee) in equal proportions
Equal Quantity of Madhu + Jala
Equal Quantity of Madhu + Ghruta
Equal Quantity of Jala + Sneha
Equal Quantity of Madhu + Sneha
Equal Quantity of Madhu, Ghruta, Vasa , Taila and Jala

-
5. **Satmya** Contradictory food with respect to Satmya(Habitual diet)
Viruddha¹⁷¹ E.g. Having cold and sweet food by a person habituated to eating
Pungent, spicy & hot food.
6. **Dosha** Contradictory food with respect to Doshas
Viruddha¹⁷² E.g. Continuously having food aggravating the doshas.
7. **Sanskara** Contradictory food with respect to Sanskara (preparation)
Viruddha¹⁷³ Sometimes food preparations made by combining two ingredients
can cause toxic reactions
E.g. Milk if boiled with Dadhi(curds) is viruddha
 Madhu + Lotus seeds / Stem
 Hot Water + Madhu / Bhallataka
 Fish and pork prepared in Sarshapa taila is sanskara
 viruddha (As.Sa.su. 9)
 Ushna Dravya + Madhu
8. **Veerya** Contradictory food with respect to Veerya(potency)
Viruddha¹⁷⁴ Mixing ushna veerya dravyas with Sheeta veerya dravyas
9. **Koshtha** Contradictory food with respect to Koshtha (digestion)
Viruddha¹⁷⁵ E.g. having mild food in less quantity by a person who is
constipated or Having heavy food in more quantity by a person
who has diarrhoea
- 10 **Avastha** Contradictory food with respect to Lifestyle
Viruddha¹⁷⁶ E.g. Having Vatavardhak aahar by a person doing strenuous job
or Having Kaphavardhak aahar by a person doing sedentary job
11. **Krama** Contradictory food with respect to Dietary Guidelines
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- Viruddha**¹⁷⁷ E.g. Having food without attending nature's call or Having food when there is no appetite
Drinking water then having sattva and again water
- 12. Parihar** Contradictory food with respect to Parihar
Viruddha¹⁷⁸ E.g. Having food, hot in potency after eating Pork
- 13. Upachar** Contradictory food with respect to Upachar
Viruddha¹⁷⁸ E.g. Having cold food/water after eating Ghrit(ghee)
- 14. Paka** Contradictory food with respect to Cooking
Viruddha¹⁷⁹ E.g. Having half cooked or overcooked/burnt food
- 15. Samyog** Contradictory food with respect to Combinations
Viruddha^{180, 181} E.g. Having Milk with Sour food
Some dravyas act viruddha due to their similar or dissimilar properties
e.g. Similar properties – Milk Madhur rasa-Sheeta veerya-Madhur vipak; Panas(Jackfruit) is also of similar properties but they are opposed to each other.
Dissimilar properties – Milk & Matsya(fish) Both are Madhur rasa – Madhur vipak but Milk is sheeta veerya while Matsya is usha veerya; Milk+ Kulattha. Milk is Madhur vipak –Sheeta veerya; Kulattha is Amla vipak –Ushna veerya,
- 16. Hrid** Contradictory food with respect to Liking
Viruddha¹⁸² E.g. Having food which is not as per liking
- 17. Sampat** Contradictory food with respect to Maturity
Viruddha¹⁸³ E.g. Having raw fruits or overripe fruits or Rotten fruits
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- 18. Vidhi** Contradictory food with respect to Dietary Guidelines
Viruddha¹⁸⁴ E.g. Having food in crowded places or while talking etc.

Samyog Viruddha^{185, 186, 187, 188, 189, 190, 200}

- Gramya /Anup Mansa/Audaka Mansa+Til (Sesame)/Guda(Jaggery) / Masha (Blackgram)/ Mulak(Raddish) / Bisa (Lotus Stem) / Virudhaka (Sprouts)/ Navankur dhanya
- Guda / Sharkara + Matsya
- Talphala + Kadaliphala
- Masha + Lakucha Phala
- Madhu / Guda + Kakamachi
- Madhu + Gramya /Anup/AudakaMansa

Combination of milk with the following items is contraindicated

- Dahi
- All Amla drava dravya or Ghana dravya
- Salt
- Varak
- Virudha(sprouted grains) / Kulattha / Tilapishta /Makushthaka / Kulattha / Masha(Black gram) / Nishpava
- Mulak, rasona etc. Haritaka/ Dried shaka .Can cause skin problems.
- Valli phala /Chatraka (Mushroom) /Vetragra(bambooshoots)/ Amra (Raw Mango) /Lakucha phala/Matulunga(Sweet Lime) / Karamarda (? Wild Gooseberries) / Mocha(Banana) / Jambu (Roseapple) / Tintidika (Tamrind) / Akhrot(Walnut) / Kathal (Jackfruit)/ Narikela(Coconut) / Dadima(Pomogranate) Amalaki (Indian Gooseberries)
- Chilichim matsya / Jaliya mansa / Matsya
- Aja mansa / Varaha mansa / Gramya /Anup mansa/Rabbit / Shukara mansa
- Madya / Taila

Dadhi is contraindicated with the following:

- Virudhaka

-
- Lakucha phala
 - Dadhi/ Takra with Kadaliphala
 - Dugdha / Dadhi / Yusha + Lakucha phala

Some food substances contradictory to each other

- Navaneet + Mulak
- Sauviraka (Kanji) + Til shashkuli
- Masha supa + Mulak
- Masha supa +Guda/Madhu/Ghruta
- Kadali + pippali/Maricha
- Sura, Krushara & Kheer should not be had in combination.
- Sura + Krushara / Payasa
- Sheeta dravya and Ushna dravya should not be eaten together
- Freshly harvested cereals and stored cereals should not be mixed together
- Raw, unripe fruits and ripe fruits should not be mixed together

Effects on the body - Dhatu Virodhi .Causes Badhirya (Deafness), Blindness, Sharir Kampa (Tremors), Jadata, Aspashtha Vaka (Slurred Speech), Minmin (Nasal voice), Death

A person who does not safeguard his own interests, who gives in to the cravings of food, who does not take into consideration the ill-effects of incompatible diet falls prey to various diseases , indriya daurbalya and finally death.The food thus ingested causes dosha prakop or dhatu dushti thereby creating vikara ¹⁹².

Acharya Vagbhat has mentioned that viruddha aahar can cause visphot (skin disorder), shopha (swelling), mada, vidraddhi (abscess), gulma, yakshma (debility), destroys teja (lustre), bala(strength), smruti(memory), mati (intellect), indriya(senses) and mind.Apart from this it causes eight serious diseases(Vata- vyadhi, Ashmari, Kushtha, Prameha, Udara, Bhagandar, Arsha, Grahni) ¹⁹³

Vyadhis caused due to Viruddhanna (according to Acharya Charak)

Kilasa, Kushtha (skin diseases), Grahani (colitis), Shotha (swelling), Amlapitta (hyperacidity), Jwara(fever), Peenasa (sinusitis), Santanadosha (disorders in the next generation), Death ¹⁹⁴

Process of Digestion ^{195, 196}

Various types of food vis. aashita, peeta, leedha, khadita is eaten by a person.



Action of **Prana vayu**

Transports food towards the stomach where the food is disintegrated by fluid(juices) and softened by fatty substances.



Action of **Jatharagni**

Pachak Pitta and Saman Vayu

Food gets acted upon by the digestive fire with the association of samana vayu. The food composed of six rasas immediately after it is ingested undergoes the stages of prapaka(preliminary digestion).



Avastha paka

Madhur Avasthapaka - the first phase is dominated by production of kapha(kledak)

in large quantities as a result of which the entire mass of food is made sweet

Amla Avasthapaka - the second phase is dominated by the production of pitta (pachak) in large quantities resulting in the entire mass of food becoming sour

Katu Avasthapaka the third phase is dominated by production of vata in large quantities resulting in food becoming pungent

Action of **Panchbhautika Agni**



This food is digested by the panchbhautika agni with the help of Jatharagni (gastric fire). Five agnis pertaining each to Prithivi, Aap, Teja, Vayyu, Aakash digest the respective fractions of the food. In body, the substances and their properties nourish their counterparts respectively such as the fraction of prithivi in food nourishes the respective fractions in the body and so on.

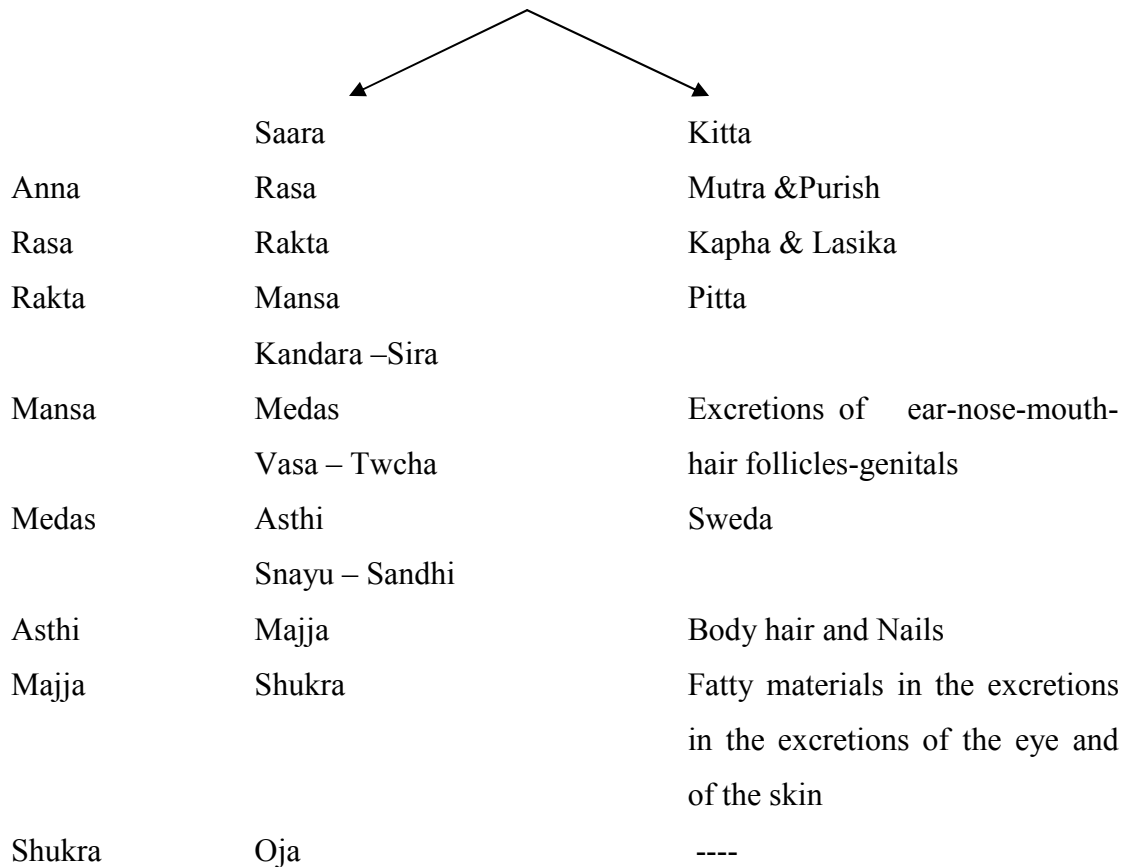
Like Kala (time) this aahar keeps on flowing through all the dhatus simultaneously gets digested by **the ushma (heat)& vayu** .



Action of **Dhatvagni**



Digested Aahar can be divided in two parts:



The food thus digested and converted by the jatharagni and dhatvagni bestows Bala (strength), Shariropachaya (growth of the body), Sukha (happiness) and life.

Thus for the normal functioning and growth of the body Sharir dhatus use aahar ingested, convert it in the form beneficial for the respective dhatus and maintain samyavastha (balance)

In this way all the materials of the human body are produced from food only. From aahar which has permeated in the whole body, all the the activities in the body are made possible, without any interruption for longer periods of time. A person is endowed with health, strength and growth, till all the effects of actions earned continue to prevail in normal course.

On the other hand excess production of essence of food or its obstruction in the channels, which will interfere with the continuous supply of nutrition of the dhatus will cause termination of all the activities or makes the body a victim of diseases.(6/30)

Digestion

Aahar Parinamakara Bhava^{19, 201} -

Digestion of aahar is dependent on two factors –

1. Pradhan hetu (main factor)
2. Sahayyak hetu (subordinate factor)

Jatharagni (gastric fire) is the main factor - it digests the food.

Vayu, kleda (kapha), sneha (moisture/unctuousness) kala (time) and samyog (combinations of various food items) are the subordinate factors which assist in digestion.

The factors which are responsible for digestion and assimilation of food are called 'Aahar Parinamakara Bhava'. These factors are –

1. Ushma (Jatharagni, Bhutagni and sapta dhatvagni) digests the food. Pachakagni (gastric fire) which is situated between aamashaya (Stomach) and pakvashaya (colon) digests four types of food and differentiates it into dosha, rasa, mutra purish etc. states acharya Sushrut.

2. Vata pushes the food downwards by which it reaches the jatharagni. Prana, Apana and Saman are the three vayu which aid in digestion¹⁹⁸. Of these prana resides in the mouth, Saman vayu resides in the aamashaya and Pakvashaya and Apana functions in the pakvashaya region. Prana vayu helps the food to proceed further in the digestive system. Saman vayu is the key factor in digestion. It accepts the food brought forward by prana vayu and digests it with the help of gastric fire. After digestion it classifies it into saara (useful part) and kitta (useless part). This useful part is directed to the sira for further circulation and assimilation while the waste products are pushed towards apana vayu. The waste products are separated into mutra (urine) and purish (faeces) and excreted due to the action of apana vayu.

3. Kleda (kapha) breaks the food particles or moistens the food. Bodhak & Kledak kapha is associated with digestion of food. It resides in the mouth in the form of saliva. According to acharya Sushrut kledak kapha resides in the Aamashaya. Bodhak kapha which resides in the mouth helps to recognise taste which in turn ignites the

appetite through the preferential rasas ingested by a person. Kledak kapha aids in moistening the food by its properties like drava, snigdha, picchila etc. and aids in digestion. Thus, all the three doshas help in the process of digestion. When these doshas are in equilibrium the process of digestion is carried out smoothly but when they are in disequilibrium they are responsible for causing diseases like indigestion, lack of appetite etc.

4. Sneha (ghrut etc) softens the food .The two factors drava and sneha help in the process of digestion. Water taken along with the food helps to disintegrate the food and sneha (fats) in the food soften it.

5. Kala (Time) - A certain time is required for the whole process of digestion right from its breakdown to assimilation, circulation and excretion.

According to Ashtanga Sangraha food gets digested in four yama (1 yama = 3 hours). Thus it takes 12 hours to complete the process of digestion. This time also differs according to the type of agni. Teekshnagni (strong appetite) digests the food earlier than the stated time while Mandagni (reduced appetite) takes a longer time ¹⁹⁹.

6. Samayoga (combination) – Food undergoes various processes like roasting, cooking , broiling, baking etc.before eating. Different food items are used in combinations to make receipes.Some are wholesome while some are harmful for the body. The combinations beneficial to the body help to keep all the dhatus in equilibrium. The various types of aahar ingested is brought to the koshtha. Due to drava (liquid) it is broken down . Due to sneha it is softened and digested by saman vayu just as in the outer world rice gets cooked due to fire and water ²⁰⁰.

Dhatu samya through Aahar ²⁰² –

Having aahar in moderation which is Desha, Kala and sharir gunaviparita , avoiding extreme food habits, not withholding the vegas(natural urges),avoiding too strenuous activities bestows swasthya (good health).

Sharir Dhatus increase due to constant and regular intake of food which is similar or possess similar gunas as those of the dhatus. Reduction or decrease of the

dhatu is caused due to opposite gunas (qualities) possessed by the food items. For example-those sharir dhatus which possess guru guna increase due to constant intake of food which guru (heavy to digest) simultaneously it decreases the dhatus which possess laghu guna. In this way all the dhatus increase with the intake of food having the same qualities and decrease due to its opposite qualities.

Intake of samana Dravya (Similar Food) - Thus intake of mansa or meat increases mansa dhatu, intake of rakta increases rakta dhatu, intake of meda increases meda dhatu, vasa increases vasa, asthi increases asthi dhatu, majja increases majja, shukra increases shukra, aama garbha (Egg) nourishes and helps in the growth of foetus.

When it is not possible to get the similar dravya it is advisable to take the food items which possess similar gunas as those of the dhatus. e.g. in decreased Shukra dhatu one can have ghrut and dugdha or any other food which is madhur and snigdha which possess the same qualities to that of shukra ²⁰³

Agnimandya and Aama Nirmiti

Life span, complexion, strength, health, enthusiasm, corpulence, lustre, immunity, energy, heat processes and vital breath – all these depend on body – fire. One dies if this fire is extinguished, lives long free from disorders if it is functioning properly, gets ill if deranged, hence agni (digestive fire) is the root cause of all ²⁰⁴. That food nourishes dhatus, ojas, strength, complexion etc, depends on agni because rasa etc. cannot be produced from undigested food ²⁰⁵.

Amongst all the 13 agni present in the body, pachakagni which digests the food is regarded as the master of all agnis. Rest of the 12 agni depend on it. The increase or decrease in functioning of pachakagni causes its reaction on rest of the 12 agni. i.e. increase of the pachakagni causes increase in the 5 bhutagni or 7 dhatvagni while reduction in the functioning of the pachakagni causes diminished functioning of the rest of the agni. Hence, to maintain health of pachakagni it is of utmost importance to be vigilant about the food intake. Sustenance of life is dependent on it. One who eats greedily leaving aside all the rules acquires the disorders due to morbidity in grahani soon ²⁰⁶.

Causes for Aama ^{207, 208}

- Atyashana(overeating), Viruddhanna(incompatible diet),Atyambupaana(excessive water intake),Akala Bhojan
- Excessive intake of guru, ruksha, sheeta,shushka ,drava food
- Dwishta (Food which has created repulsion in the mind for some reason), Apavitra(unhygienic food)
- Vishtambhi(food which creates constipation), Vidahi(food which causes burning sensation)
- Psychological causes –Kama, Krodh, Lobha, Moha, Irshya, Hri (shyness), Shoka, Manodvega(mental irritation), Bhaya, Upatapta Manas(Stress)

Samprapti of Aama Nirmitti

Abhojana (fasting), ajeerna (intake of food though having indigestion), atyashana (overeating), vishamashana (irregular intake of food with respect to time and quantity), asatmya bhojan (food opposite to ha bitual diet),guru, sheeta, atiruksha (excessive dry), dushta aahar(contaminated food) causes derangement of agni.This dysfunction of agni cannot digest even simple light food taken. This undigested food become shukta (amla/acidic) and thus becomes toxic. It is unable to nourish the dhatus since the aahar rasa formed is vitiated.

Definition of Aama ²⁰⁹

Due to the weakness of agni (gastric fire) the food remains undigested and vitiated due to aggrevated doshas. This undigested and vitiated form is called as ‘Aama’.

This aama is caused due to the association and aggrevation of doshas. When doshas and dhatus come in contact with this vitiated aama they are termed as saam Dosha or dhatu. The diseases thus caused are called as saam roga.

Symptoms due to Aama ²¹⁰

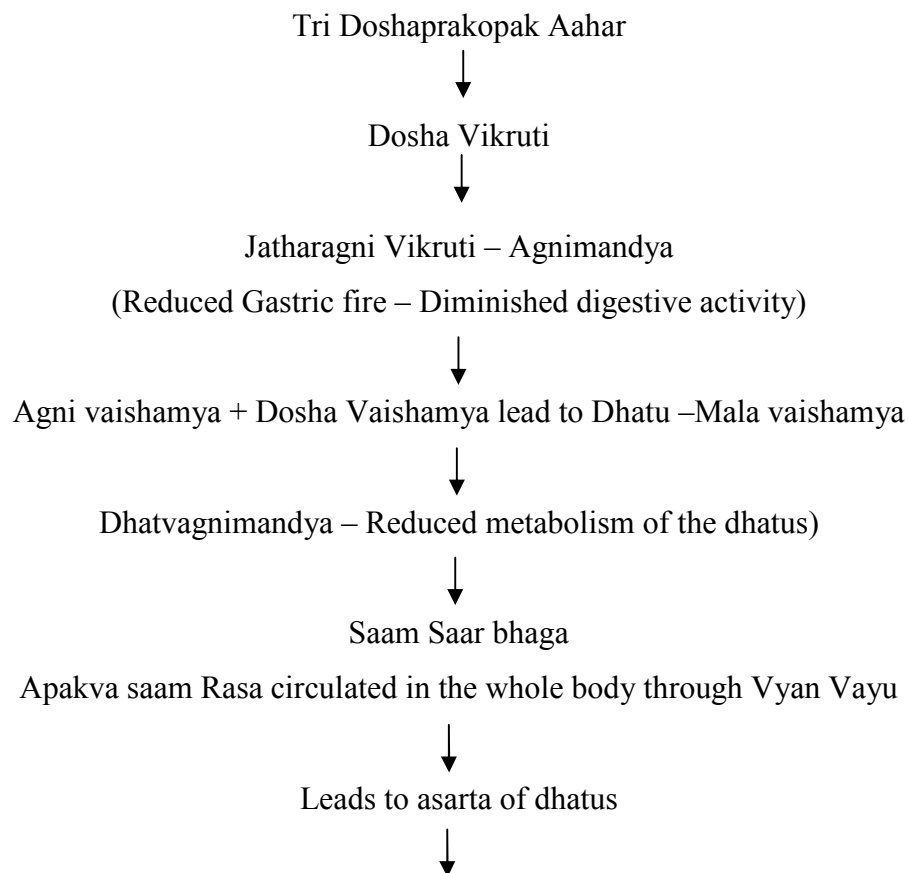
That indigestion exhibits the following symptoms – stasis of food, malaise, headache, fainting, giddiness, stiffness in back and waist , yawning bodyache, thirst, fever,

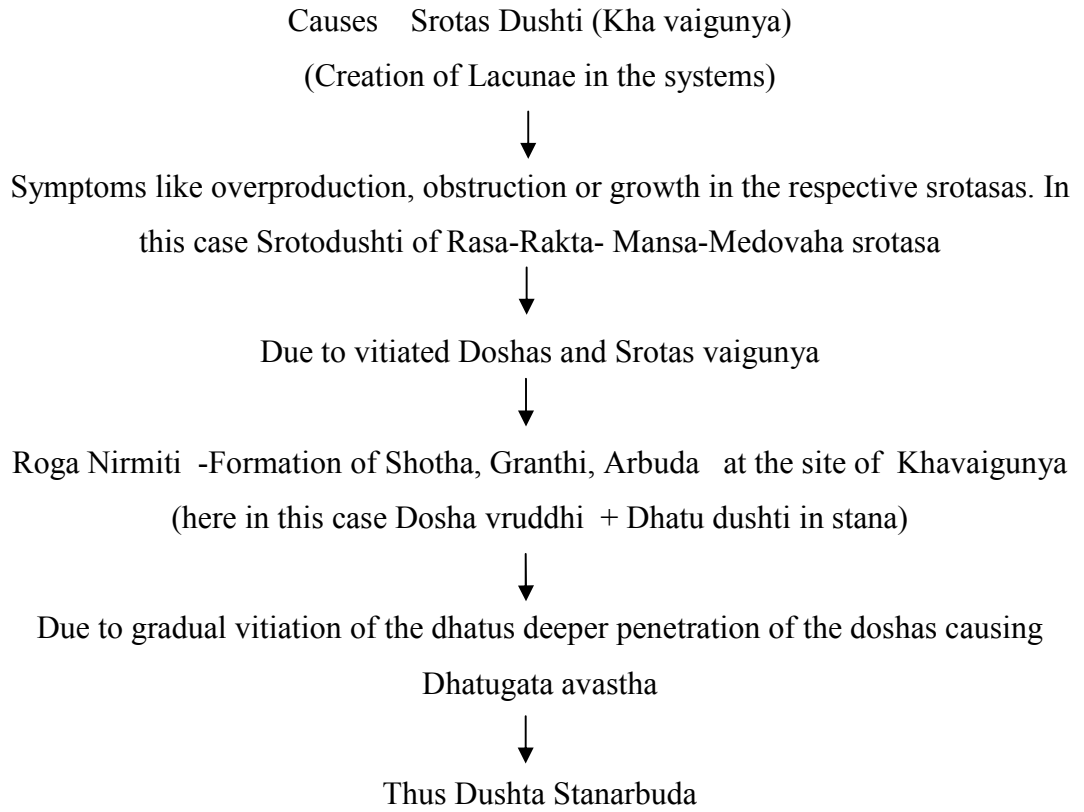
vomiting, gripping, anorexia and improper digestion of food. The severe food toxin when combined with pitta produces burning sensation, thirst, and disorder of mouth. Acid gastritis and other paittika disorders. When combined with kapha it produces kaphaja disorders. It produces various vatika disorders if combined with vata. Affecting urine, faeces and rasa etc. (dhatus) it causes disorders of urine, belly and dhatus respectively.

Digestive fire if irregular causes disequilibrium in dhatus because of irregular digestion (of nutrients) and if intense having little fuel dries up the dhatus. The normal digestive fire in a person taking proper food maintains the equilibrium of dhatus by regular digestion²¹¹.

The weak digestive fire burns the food incompletely which goes upwards or downwards. When it moves out downwards either in ripe or unripe condition. A person who habitually has Viriddhashana, Adhyashana (overeating), Who takes food when suffering from Ajeerna (indigestion) develops Aamavisha (aama dosha which causes toxicity symptoms). This aama dosha is incurable.

Samprapti of Dushta Stanarbud





DIETETICS ACCORDING TO MODERN MEDICINE

Food is the necessity of man. It is a mixture of different nutrients such as carbohydrate, protein, fat, and vitamins and minerals. These nutrients are essential for growth, development and maintenance of good health throughout life. They also play a vital role in meeting the special needs of pregnant and lactating women and patients recovering from illness.



Definition of Nutrition (WHO)

Nutrition is the intake of food, considered in relation to the body's dietary needs. Good nutrition – an adequate, well balanced diet combined with regular physical activity – is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased

Fig. 12 - Dietary Nutrients susceptibility to disease, impaired physical and mental development, and reduced productivity.

What is a balanced diet?

A balanced diet is one which provides all the nutrients in required amounts and proper proportions. It can easily be achieved through a balance of the four basic food groups. The quantities of foods needed to meet the nutrient requirements vary with age, gender, physiological status and physical activity. A balanced diet should provide around 50-60% of total calories from carbohydrates, preferably from complex carbohydrates, about 10-15% from proteins and 20-30% from both visible and invisible fat. The diet that one consumes must provide adequate calories, proteins and micronutrients to achieve maximum growth potential.

In addition, a balanced diet should provide other non-nutrients such as dietary fiber, antioxidants and phytochemicals which bestow positive health

benefits. Antioxidants such as vitamins C and E, beta-carotene, riboflavin and selenium protect the human body from free radical damage. Other phytochemicals such as polyphenols, flavones, etc., also afford protection against oxidant damage. Spices like turmeric, ginger, garlic, cumin and cloves are rich in antioxidants.

Classification of food

According to functions of food :

Table 5 . . Classification of Food based on Function

	MAJOR NUTRIENTS	OTHER NUTRIENTS
Energy-rich Foods	Carbohydrates and Fats Whole grain cereals, millets Vegetable oils, Ghee, Butter Nuts and Oilseeds Sugars	Protein, fibre, minerals, calcium, iron & B-complex vitamins Fat soluble vitamins, essential fatty acids Proteins, vitamins, minerals Nil
Body Building Foods	Proteins Pulses, Nuts and Oilseeds Milk and Milk products Meat, Fish ,Poultry	B-complex vitamins, invisible fat, fibre Calcium, vitamin A, riboflavin,vitaminB12 B-complex vitamins, iron, iodine, fat
Protective Foods	Vitamins and Minerals Green leafy vegetables Other vegetables and Fruits Eggs, milk and milk products , flesh foods	Antioxidants, fiber and other carotenoids Fiber, sugar and antioxidants Protein and fat

According to Food Groups:

The Five Food Groups:

According to the food guide the five food groups are :

-
1. Pulse-milk-egg-meat-fish group of Body building foods
 2. Protective vegetable and fruits group
 - (a) Green and yellow vegetables and fruits group
 - (b) Amla-guava-citrus fruits group
 3. Other vegetables and fruits group
 4. Cereals and millets group
 5. Oils, fats and sugars group

Each group supplies some nutrients and not all nutrients. A combination of items selected from each of the five groups in the right proportion is ideal and will work towards a *balanced diet*.

Pulse-Milk-Egg-Meat-Fish Group or Body-Building Foods

The foods included in this group are important for their protein content. Proteins are required for replacing the wear and tear of the body and building of tissues. These foods also supply some amount of the B-vitamins such as thiamin, riboflavin and niacin. Eggs, milk and liver are good sources of iron and milk is a good source of calcium. One serving of this group supplies about 5-6 grams of protein.

Pulses include all types of *daIs*, e.g. *mungdal*, *turdal*, *masur dal* etc. Legumes include all dry whole grams, beans, peas, etc. Nuts and oil- seeds include those in common use such as sesame, which can be included in sufficient amount to contribute to the daily protein intake.

Serving Unit: 1 serving = 25g of each of these

Milk includes curds and other preparations containing whole milk (5-6 percent).

Serving Unit: 1 serving = An average teacup or 150 ml

Egg in a diet means a hen's egg.

Serving Unit: 1 serving = One egg (40-50 g)

Meat-Fish-Poultry refer to lean parts of the animal. The protein content of the lean parts is the same but if the adhering fat is not removed, the protein content decreases in the portion of meat.

The Protective Group Including Vegetables and Fruits

This group is a rich source of beta-carotene (a precursor of vitamin A). It includes the dark green leafy vegetables such as spinach, fenugreek, radish, amaranth, coriander leaves, the light green leafy vegetables such as cabbage, and onion-tops and deep yellow vegetables and fruits such as carrots, orange, red pumpkin, mango, papaya and apricots.

Serving unit : 1 serving = Half a cup or 50-75 gm of the cooked vegetable or chopped fruit . Whole fruits such as mango and orange maybe counted as one serving.

Almost half a day's need for vitamin A is satisfied by one serving of this group.

Vitamin C-rich Vegetables and Fruits

This group includes fruits and vegetables such as *amla*, lemon, *ber*, guavas, drumsticks, cabbage and all citrus fruits such as oranges, grapes, and all other fruits such as papaya, pineapple, tomato, strawberries, etc.

Serving unit : 1 serving = Half a cup of fruit or 50-75 grams of vegetable /portion
As ordinarily served such as a slice of papaya or an orange. The foods in this group are rich source of vitamin C and fiber.

At least one serving of this group must be eaten every day.

Other Vegetables and Fruits Group

These include brinjal, cucumber, pumpkin, *bhendi*, all ash-gourds i.e. bottle, snake, ridge gourds, etc.; all immature beans and peas, beetroot, radish, potatoes, sweet potatoes and yam. Other fruits include bananas, apples, melons, grapes, berries, etc.

Serving unit : 1 serving = Half a cup or 50-75 gm of these.

An intake of at least two or more servings of this group are recommended per day.

Cereals and Millets Group

Foods in this group provide carbohydrates, proteins and calories. The seeds of plants are richer in thiamine than all other portions of the plant. Cereals such as wheat and rice may then be considered as a good source of thiamine.

The foods in this group are edible seeds of plants belonging to the grass family. They are preparations of rice, wheat, *jowar*, *bajra*, maize, *ragi (nachni)* and their products such as *suji*, rice flakes, vermicelli, etc.

Serving Unit: 1 serving = Any preparation containing 25g of the cereal may be counted as one serving. In practice, it means half a cup of cooked rice or one medium *chapati*, two to three *puris*, or one small *roti*, one slice bread, 25g rice flakes or any ready-to-eat-cereal.

At least six or more servings may be selected from this group. In order to improve the quality of protein, the meal may include two or more cereals and using a cereal and pulse-legume combination, e.g. *khichdi* using rice and *tur dal*, has better protein quality than rice alone.

Sugar and jaggery, Fats and Oil Group

Foods in this group mainly supply energy. This group is hence known as the *fuel group*. Sugar and jaggery release energy very easily, while fats and oils are concentrated sources of *reserve* energy.

Jaggery (*gud*) is the unrefined concentrate obtained from sugarcane juice. It is commonly used in several preparations in our country. It is a good source of minerals especially iron since it is prepared in iron vessels.

Sugar is mainly used to sweeten beverages like tea and coffee, *sherbets* and squashes. *About 25 g per day is sufficient.*

Oils and Fats : Oils and fats are used for seasoning our food. They improve the palatability, flavour, texture and satiety value of food. Apart from this, oils and fats are also important as they carry fat-soluble vitamins like A, D, E and K into the body and to the tissues. Hydrogenated fats are generally fortified with vitamin A. It is, therefore, advisable to use these in the daily diet.

Oils include all vegetable oils such as groundnut, sesame, coconut, sunflower, mustard, safflower, com, soyabean, palm, etc.

Fats include *ghee*, butter, margarine as well as hydrogenated vegetable oils commonly called *vanaspati*.

Oils, besides giving energy, are invaluable for the essential fatty acids (poly-unsaturated) that they supply. These fatty acids are found in all oils and fats in more or less amounts. Especially rich in these are safflower, corn, soyabean, cottonseed and sunflower oils. The Recommended Dietary Intakes (1988) suggested that fat in the diet should not exceed an amount that can provide 15-20 percent of the total recommended calorie intake. Fat intake should include at least 15g of vegetable oils in order to meet the requirement of essential fatty acids. In young children, fat in the diet should not provide more than 25 percent of the total calories of the diet. However, for all age groups about half of this will come from invisible fat in the diet.

Dietary Fibre

Dietary fibre delays the intestinal transit of the food consumed. Dietary fibre is important for proper bowel function, to reduce chronic constipation, diverticular disease, haemorrhoids coronary heart diseases, diabetes and obesity. They also reduce plasma cholesterol. The protective role of dietary fibre against colon cancer has long been recognised.

Antioxidants

In the recent past, the role of vegetables and fruits as sources of antioxidants has been receiving considerable attention. Antioxidants restrict the damage that reactive oxygen free radicals can cause to the cell and cellular components. They are of primary biological value in giving protection from certain diseases. Some of the diseases that have their origin in deleterious free radical reactions are atherosclerosis, cancer, inflammatory joint diseases, asthma, diabetes etc. Raw and fresh vegetables like green leafy vegetables, carrots, fresh fruits including citrus and tomatoes have been identified as good sources of antioxidants (free radical-scavengers). The nutrients vitamin C and carotenoids that are present in these vegetables are also potential antioxidants. Different coloured vegetables provide different antioxidants like orange coloured provides beta-carotene, deep red provides betalains, blue and purple provide anthocyanins.

Miscellaneous Foods - This category is not included in the Basic Five Food groups, but the items listed herein are an integral part of the Indian diet. They are spices and condiments, pickles, *papads* and *chutneys*. All these either impart taste and typical aroma to food or contribute to one or the other nutrients, e.g. the *paan* (betel leaf smeared with calcium hydroxide) is a rich source of calcium. Salt is the essence of our daily food and provides sodium, which is essential for our muscle control.

Dietary fats and breast cancer

Fats include oils, butter, margarine, cheese, cream, ice cream as well as the fat in meats, fish and nuts. There are also hidden fats ready made foods like sweets, biscuits, cakes, savoury snacks, chocolate products and other foods.

The EPIC (project of IARC) study has shown that women who ate higher levels of saturated fats had double the risk of breast cancer compared to those eating the least.

Sugars, carbohydrates and breast cancer

There is no strong evidence of a direct link between sugars and carbohydrates and breast cancer. But a large study of Chinese women in the USA reported in 2009 that for women younger than 50 a high carbohydrate diet slightly increased the risk of developing breast cancer. And the EPIC study showed that high carbohydrate diets are linked to an increased risk of a type of breast cancer called oestrogen receptor negative breast cancer.

Eating too much sugar can make you put on weight and we know that being overweight increases the risk of breast cancer in post menopausal women.

Dairy foods and breast cancer

Dairy products have been studied for their effect on breast cancer risk. Some recent studies have shown that women with a high intake of dairy products have a lower risk of breast cancer, but these results are inconclusive. Dairy products are high in calcium, and several studies show a lower risk of breast cancer for women with high calcium intakes or calcium blood levels.

Fibre and breast cancer

Fibre is found mostly in fruit, vegetables and whole meal cereals (including flour and all kinds of bread, particularly whole grain). There is some evidence that diets containing more than 25g of fibre per day reduce the risk of breast cancer in premenopausal women.

Eating wheat bran fibre has been found to lower the levels of oestrogen in the blood in women who have not yet had their menopause. Lower levels of oestrogen may help to reduce the risk of breast cancer. Researchers aren't quite clear about why wheat fibre reduces oestrogen levels. It may not be an effect of the fibre itself. Instead it may be that high fibre diets contain less fat and more antioxidants than low fibre diets.

Fruit and breast cancer

An overview study found that women who ate more fruit had a lower risk of breast cancer. This may be due to the fibre and antioxidants that they contain. Antioxidants are molecules that prevent a chemical process called oxidation, which occurs when oxygen molecules join with another chemical. Oxidation can cause gene damage in cells that may lead to cancer. Antioxidants include vitamins A, C and E and selenium.

ANUVANSHIKTA

Vansha means descendants of one's individuals. **Anu** is to follow. Thus anuvanshikta can be termed as the traits which descend from one generation to another. In other words Anuvanshikta denotes Heredity. In the scriptures inbreeding or progeny from marriage in close relations is prohibited. This indicates that the role of heredity was prevalent in those times also. Acharya Charak has also advised mating a female from a different lineage than that of the male. While classifying diseases acharya Vagbhat has mentioned vyadhis of seven types of which the foremost is 'Sahaj'. Sahajroga means disorders caused due to vitiation of Shukra and /or Artav. Kushta (leprosy), Prameha(diabetes),obesity , Arsha(piles) etc . This denotes the dominance of Maternal and Paternal factors in the causation of disease²¹².

Importance of anuvanshikta can also be understood according to the classification of diseases described in Sushrut Samhita. Vyadhis (diseases) have been described of three types according to Sushrutacharya.²¹³ . Aadhyatmika, Adhibhautika& Adhidaivika, which have been further catagorised in seven types. Of these seven types Aadibalapravritta, Janmabalapravritta, Doshabalpravritta are included in Aadhyatmika vyadhis. Aadibala pravritta vyadhis are caused due to maternal or paternal factors.

Acharya Charak has also mentioned Heredity as a causative factor in occurrence of diseases like Prameha , Arsha. Prameha or Arsha caused due to beeja dosha is considered asadhya(incurable) by Acharya Charak. Sahaj Arsha is caused due to maternal factor according to him²¹⁴.

Beeja

Beeja is synonymous with Shukra in males and Aartav in females.It is one of the synonyms for shukra.

Synonyms for Shukra – Teja, Retas, Beeja, Veerya, Indriya²¹⁵

Formation of Aartav

Aartava is formed from rasa. It is one of the updhatus of Rasa dhatu. Its function starts at the age of twelve and stops around fifty years of age. Though Rasa is mild in nature Rajas which is formed from it is ushna since the garbha (foetus) formed from it is a union of Agni and Soma. According to acharyas the universe is made up of two forces. Agni (Heat) and Soma (Cold). These two forces balance each other²¹⁶.

Factors necessary for a Healthy Progeny

Acharya Sushruta states collective factors necessary for conception. They are Rutu that is the proper menstrual cycle, Kshetra denotes abode. It refers to Uterus of the female, Ambu denotes the digested aahar rasa which provides nutrition to the foetus. Just as water is necessary for life aahar rasa is necessary for proper growth of the foetus. Beeja is combined reference of Artava and Shukra. Thus Acharya sushrut has taken into consideration the anatomy and physiological aspects important for a healthy progeny²¹⁷.

If Shukra, Aartav, Atma, Ashaya and Rutukala are ideal without any faults, if the mother takes nourishing diet which is necessary for the growth of the foetus then only a proper foetus grows in the womb and takes birth.²¹⁸

Formation of Shukra

Shukra is the element which is necessary for conception. It is considered as having four supports viz. Vayu, Agni, Bhumi and Aapa and is formed by six rasas²¹⁹.

Shukra is the seventh dhatu and is formed from majja dhatu. It takes a month to form shukra dhatu from aahar rasa. According to some acharyas it takes one day while some consider it takes six days for the shukra to be formed²²⁰. – Shloka to be written
221

The aahar rasa gets circulated in the body through vyan vayu. This rasa remains in each dhatu for 3015 kala. According to this calculation Shukra is formed in a month and the same way Aartava is formed in a month. After the digestion of food aahar rasa is formed from which rasa dhatu comes into existence the same day. After that each dhatu takes five days for its formation. Some acharyas propound that Shukra is formed in a day, according to some it takes seven days while some quote eight days.

Shukra Sampat (Ideal qualities of Shukra) ^{222, 223, 224, 225}

- Sphatikabha (trasluscent)
- Drava(liquid) in consistency
- Snigdha(unctuous)
- Guru (heavy)
- Picchila(slimy)
- Avidahi (non – irritant/ soothing)
- Saumya (mild)
- Madhur(sweet)
- Madhugandhi(smelling like honey)
- Avisra (not having a foul smell)
- Appearance should be like taila(oil) or honey.

In short shukra should be mild, unctuous and should be clear.

Site ^{226, 227, 228} – Shukra is present in the whole body and its main sites are Stana and Vrushan(Testes). Acharya Charak has mentioned Shefas(Penis) and testes as the main sites of Shukravaha srotasa.

Just as the juice is present in invisible form in sugarcane or Ghrut is present in milk the same way shukra is present in the whole body and is expressed through shhukravaha srotas.

Measure of Shukra ²²⁹ – Ardha Anjali (Anjli = measure of hollow formed by edges of palms joined together.)According to Sushrutacharya the exact measure of Shukra cannot be described.

Functions of Shukra ^{230, 231} –

- Beejartha - Main and supreme function is reproduction
- Dehabala (Gives physical strength)
- Imparts Dhairya (mental strength)
- Creates Harsh (feeling of happiness)
- Preeti (affection)

Symptoms due to imbalance of Shukra

Shukra vruddhi Lakshan²³² -

- Overindulgence in sexual pleasures
- Can cause Shukraashmari

Shukrakshaya Lakshan²³³ -

- Late ejaculation of shukra or can sometimes cause bleeding
- Pain in the testes
- Burning sensation in the penis

Causes for Vitiating of Shukra²³⁴

Due to excessive coitus, exercise, use of unsuitable things, untimely coitus, in non-vagina and abstinence therefrom, excessive intake of rough, bitter, astringent, salty, sour and hot things, ignorance about the taste of woman, abnormal discharge, old age, anxiety, grief, suspicion, faulty application, fear, anger, exorcism, emaciation caused by diseases, suppression of urge, wound and morbid affection of dhatus, doshas singly or collectively, having reached the semen-carrying vessels cause defects in semen.

Symptoms due to Shukra Dosha (vitiating shukra)²³⁵

Vitiating of shukra causes Klaibya (sterility), Aharshana (irrectile dysfunction) in the affected male. If a conception occurs then the child is affected by the following symptoms :

- Napunsaka (Sterility)
- Alpayusha (short life span)
- Kurup (ugly)
- Vitiating shukra causes frequent miscarriage

Thus vitiating shukra can cause harm to the child and spouse.

Eight types of Shukra dosha (Vitiating semen)^{236, 237} -

Shukra vitiating by Vata-Pitta-Kapha, which emits kunap gandh (cadaveric smell), grathita (is clotted), puti -puya (has the smell of pus), Ksheena (is very little in quantity) or mutra-purish gandh (has the smell of urine and faeces) is incapable of reproduction.

Acharya Charak has mentioned the following eight types of Shukra dosha - Phenila(frothy).tanu(liquid in consistency), ruksha(dry), vivarna(which has a different colour) ,puti(foul smelling), picchila(slimy), vitiated by other dhatu are the eight doshas mentioned by acharya Charak.

Semen vitiated by vata acquires colour and features characteristic of vata, that vitiated by pitta acquires colour and features characteristic of pitta; that vitiated by kapha acquires colour and features characteristic of kapha. The semen vitiated by rakta emits cadaveric smell and is profuse in quantity. The semen vitiated by Kapha and vata together gets clotted that by pitta and kapha together is like putrid , pus, that vitiated by pitta and vata together becomes less in quantity and has the characteristic features and that vitiated by a combination has the odour of urine and faeces. Out of these ,the semen which has a cadaveric smell or is clotted or is like putrid pus , or else is less in quantity is only curable only with difficulty while that which has the odour of urine and faeces is incurable.

Vatadushit , Pitta dushit and Kaphadushit shukra bears the characteristics of that particular dosha. Raktadushta shukra resembles pittadushit shukra. These doshas are curable. Kunapgandhi shukra smells like a corpse, if there is vitiation of rakta also it smells like ghrut(ghee) or taila(oil).Granthi shukra is caused by vitiated kapha-vata. Puti-puya is caused due to vitiation of pitta-kapha. Ksheena shukra is caused by vitiated pitta-vata and dhatukshya.

Mutra-purishgandhi is caused by vitiation of all the three doshas and is incurable.

Artava

One which is generated with regular interval is called as Artava ²³⁸.

Artava

Synonyms ²³⁹ – Rakta, Asruk, Lohita, Shonita, Pushpa, Raja

Artava is described as the menstrual flow, which occurs every month for 3 days. This is one of the characteristics. Artav doesn't denote only menstrual flow but it also signifies the beeja which is formed every month ^{240, 241}.

Site ²⁴² -

Garbhashaya (Uterus) and Aartavvaha Dhamanni (fallopian tubes and ovary) are the two main sites of Aatav.

Ideal Aartava ^{243, 244}–

- Should have a cycle of one month
- Menstrual cycle should be upto 5 days consecutively
- Menstrual flow should not cause any irritation, burning sensation or pain.
- Menstrual flow should not be too less / excessive .
- The colour of menstrual blood should resemble gunja phala, padma, Alakta or like indragopa insect .
- Artava resembles rakta and the same is responsible for conception.It nourishes the foetus and also nourishes the stana. It forms stanya which is life for the baby ²⁴⁵ .
- Should not discolour the clothes

Artava Kshaya Lakshan ²⁴⁶–

- Reduced Menstrual flow
- Disturbed menstrual cycle
- Pain in the pelvic region

Artava Vruddhi Lakshan ²⁴⁷–

- Bodyache
- Excessive menstrual flow
- Foul odour

Acharya Sushrut has described eight shukra and aartav doshas viz. Vata,Pitta,Kapha, Rakta,Kunap , Granthi, Puti-Puya, Kshina, Mutra-Purisha gandha which can lead to problems for conception.

Artava also gets vitiated by three doshas viz. Vata-Pitta-Kapha and the fourth Shonita individually, in combinations of two or by all of them combined together, resulting in sterility. Vitiating of the doshas in them should be inferred according to their characteristic colour and features. Out of these one which emits cadaveric smell, is clotted is like putrid pus is scanty or has the odour of urine or faeces is incurable and the rest are curable.

Atma sampat –

Atma should be bound by the meritorious karma to bind with the shukra-Shonita ²⁴⁸

Ashaya Sampat –

Aashaya means abode. Here it refers to Uterus or Garbhashaya –Garbha + Ashaya – abode of the garbha. Acharya Sushrut has mentioned seven ashayas in humans. He has described three more in the females viz. two Stanyashaya and one Garbhashaya. Yoni where the conception takes place resembles like a shankha(conch shell)and comprises of three avarta (divisions). In the third avarta lies garbhashayya(where the ovum gets embedded) It resembles shape of Rohit fish ²⁴⁹.

Site ²⁵⁰–

Garbhashaya is situated behind Basti.Since garbhashaya is the site where the foetus gets embedded and grows, it should be ideal without any deformity or disease. 20 yoni vyapadas are mentioned in ancient ayurvedic texts some of which can cause infertility or difficulty in conceiving.

Kala Sampat ²⁵¹–

Kalasampat refers to rutukala. Acharyas have described rutukala as the timespan in which conception can occur. This span is of twelve nights.(Su.Sha. dalhan tika)

Garbhavkranti (Conception to Birth of a child) ²⁵² –

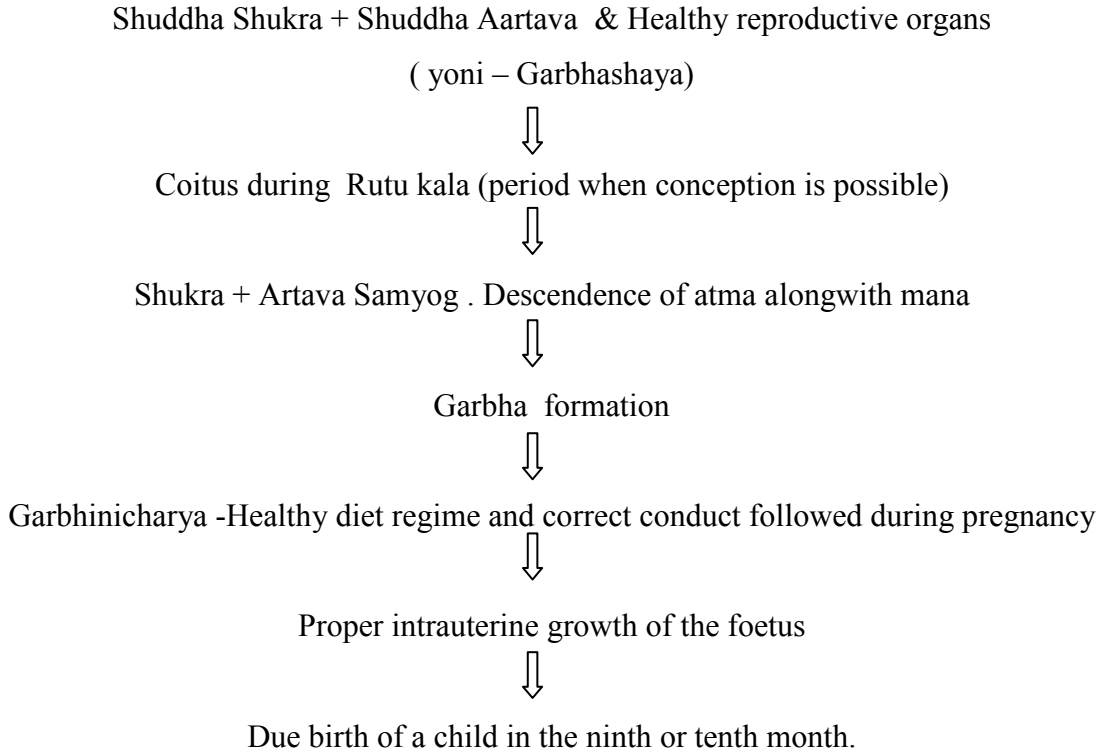


Table 6. Garbha Masanumasika Vruddhi

	Characteristics
Prathama Masa ^{253,254,} ²⁵⁵ (1 st month)	Advent of Atma in the uterus. This atma takes the form of foetus as kapha, with the combination of dhatus. It has all the necessary elements in the minute form. Acharya Sushrut has termed it as ‘Kalala’(soft mass). According to Kashyapacharya Jeevatma divides the beeja according to skeletal system.This beeja is engulfed or covered by rakta.This denotes zygote formation.The bones and mansa(skeletal and muscular system) are formed from shukra.From both(shukra –artav the organs are formed.
Dwitiya Masa ^{256, 257}	In the 2 nd month this kalala becomes solid. It assumes form of pinda(muscular mass), Peshi(elongated mass)or arbud(solid mass).

(2 nd month)	<p>Pinda shape denotes male, peshi denotes female and arbud denotes enuch.</p> <p>According to Sushrutacharya due to the action of sheeta(kapha), ushma(heat) and vayu(air) the kalala becomes solid. If it is in pinda shape it denotes male,if peshi denotes female and arbud denotes enuch.</p>
Truteeya Masa ^{258, 259} (3 rd month)	<p>All the indriyas(special senses), avayava(organs) are initiated at the same time.</p> <p>In the third month five stumps - two of hands, two of feet and head are formed.</p> <p>According to Kashyapacharya all the indriyas(special senses), avayava(organs) are initiated at the same time. The senses of the foetus are very miute. It develops feelings and heart beats.</p>

The Maternal factors, Paternal factors are all formed from panchmahabhutas.

	Charak samhita	Sushrut samhita	Kashyap Samhita
Akash	Shabda, Shrotra Laghuta, sukshmata and vivek	Shabda, Shrotra All hollow spaces, viviktata(differentiation)	Shabda, Shrotra Laghuta, sukshmata and vivek Mukha, Kantha, Koshtha
Vayu	Sparsh, Sparshanendriya Rukshata, Chalata, Dhatuvyuhan(movement)	Sparsh, Sparshanendriya a Laghuta, Chalata, Spandan (throbbing)	Sparsh, Sparshanendriya Rukshata, Prerana, Dhatuvyuhan(movement of prana-avana)
Agni	Rupa, Chakshurindriya Ushma, Pachan, Prakash	Rupa, Rupendriya Teekshnata, Pachan, Varna, Santapa, Bhrajishnuta, Shaurya	Rupa, Chakshurindriya Prakash, Pakti, Ushma, Pitta, Sharirvrudhi
Jala	Rasa, Rasanendriya	Rasa, Rasanendriya	Rasa, Rasanendriya

	Shaitya, Mardav, Snehana	Dravasamuha, Sneha, Shaitya, Shukra, Gaurav	Drava, Shaitya, Mardav, Sneha, Kleda, Kapha, Rakta, Mansa, Meda, Shukra
Prithvi	Gandh, Ghranendriya Sthairya, Kathinya, Gaurav	Gandha, Gandhendriya All murta samuha, Guruta	Gandha, Ghranendriya Gaurav, Sneha, Murti

	Characteristics
Chaturtha Masa ^{260, 261} (4 th month)	Garbha attains stability. It grows in size. According to Sushrutacharya – Differentiation of the organs becomes more clear. It attains shape. In this month the functioning of heart with respect to emotions is seen. The foetus expresses its likes or dislikes through the mother. She is called ‘Daurhudini’ i.e. having two hearts.
Panchama Masa ^{262, 263} 5 th month	Compared to other dhatus Mansa and Rakta develop. According to sushrutacharya Mana (mind) develops. It becomes more sharp.
Shashtha Masa ^{264, 265} (6 th month)	Bala (Strength) and Varna (complexion) get enhanced. According to Sushrutacharya Buddhi (intellect) becomes more defined. According to Kashyapacharya Bala, Varna and Ooja increase.
Saptama Masa ^{266, 267} (7 th month)	In this month the foetus develops and nourishes in all aspects. According to Sushrutacharya all the organs become well-defined. According to Kashyapacharya growth of the foetus is complete and the tridoshas (Vata-Pitta-Kapha) are also developed.
Ashtama Masa ^{268, 269} (8 th month)	In the month Ooja circulates from the mother to the foetus and back. Hence the mother exhibits mixed emotions. Sometimes she is happy and at times depressed.
Navam Masa (9 th month)	The foetus is fully grown and takes birth.

Six Factors for Formation of Foetus

Six factors take part in the formation of the foetus they are Mata(Mother), Pita(Father), Atma,Satmya, Rasa and Mana. Just as assembly of various parts is necessary in the making of a chariot the contribution of these factors is equally responsible for a healthy progeny²⁷⁰.

Characteristics of a foetus

Formation of the Garbha(foetus)is due to four factors vis.Matruj, Pitruj, Aaharaj and Atmaj karma. The other four factors are Vayu, agni, Jala and Prithivi mahabhuta. The dominant factors among matruj, pitruj , atmaja karma and also the dominance of Manas guna decide the characteristics of the foetus²⁷¹.

Causes for normal growth or abnormal characteristics in a foetus²⁷²,

During conception the dosha which holds dominance is responsible for the prakruti of the child. This dominance is of two types- Prakrut & Vikrut.The dominance specified is in due natural course which imparts individual characteristics to the foetus which is termed as prakruti.It is of seven types.Vikruti denotes aggrevation of the doshas. The natural dominance is prakruti while aggrevation is vikruti.

Prakruti

The prakruti of a person depnds on the following factors –Shukra Shonita PRakruti , Kala prakruti, Garbhashaya prakruti, Matruj Aahar-vihar prakruti and Mahabhuta Prakruti

- Prakruti of Shukra & Aartav – The qualities of Shukra of the male and aartav of the female
- Kala –Garbhashaya prakruti – This denotes the avasthika kala of the mother i.e the age of the mother and condition of the uterus at that time.
- Matruj Aahar-Vihar Prakruti – The diet taken by the mother from the time of conception also is to be taken into consideration.
- Mahabhuta Prakruti – The combined effect of mahabhuta combination of shukra-artava, dietary dravyas taken by the mother, atma and

panchmahabhuta(The five basic elements –viz. Prthivi, Aap, Teja, Vayu and Aakash)²⁷³

Seven types of constitution get formed due to doshas; three from each of them separately, three in combination and one from the normalcy of all the three doshas. At the time of union of shukra and aartava and their stay in the uterus one or more of the doshas which get increased by the foods and activity of the mother gives rise to the constitution which persists till death; just as worms which are born in a poisonous plant or poisonous creatures from poison or just as the poison in the bodies of scorpion and snake, the human body also gets its constitutions formed from its own poison.(the doshas)²⁷⁴.

Since the shukra and aartava are the causes of the future body and are full of them and being natural to the body they do not harm the body; by their identical qualities (of food and activities) they help the body, even by the use of their opposite qualities they do not harm the body suddenly. If the doshas have become abnormally increased at that stage (time of shukra-Artava union) there will be no formation of the embryo at all; or if it gets formed it dies or becomes abnormal. Hence some others say – vata and other doshas are of two kinds viz. Normal and Abnormal. The normal ones are the cause for the formation of seven kinds of constitutions and also the chief causes for the formation of the body, they are called dhatu because they support the body; they are also the seeds for the abnormal ones known as vikruta dosha and are not dying (present till death); though all of them are co-existing in the body, the constitutions is named after that dosha which is predominant²⁷⁴.

The abnormal ones are produced in the body as the waste materials of the essence of food after metabolism. They get nourished and grow from the normal ones, they undergo increase and decrease in their own quantity by the effect of season etc. sustain the body(maintain in health) and also vitiate it²⁷⁷.

Organs formed from Matruj & Pitruj Factors:

Matruj Factors^{275, 276, 277}:

Matruj Factors- Soft elements in the body, Twacha(skin),Rakta(Blood), Mansa (muscles), Meda (Adipose tissue), Nabhi(umbilicus), Hrudaya(Heart), Aamashaya (Stomach) and Garbhashaya (Uterus). Yakrut (Liver), Antra (Intestines) and

Guda(Rectum) are also formed from Matruj factor. Along with these factor Acharya Charak has also mentioned Pleeha (Spleen), Vrukk(Kidneys), Basti (Bladder), Purishadhana (Caecum), Pakvashaya (Large Intestine), Uttarguda (Sigmoid) Adharguda (Rectum), Kshudrantra (Small Intestine), Vapavahana (omentum) as Matruj factors.

Pitruj Factors ^{278, 279, 280} –

Kesha (hair), Nakha (nails), Asthi (Bones), Shukra (semen), Sira (veins), Snayu (Tendons) etc. all the solid elements in the body. Smashru(facial hair), Loma (body hair), Danta(Tooth), Dhamani(Arteries) are also formed due to Pitruj factor.

Atmaja Factors ^{281, 282, 283} –

To be born in various yoni (species e.g. Animals , birds, Human etc) , descendance of Mana, Panch dnyanendriya(five special senses), Prana-Apana(vital force), to sustain life, Various forms of life, Psychological factors like Kama (sensual behavior), Krodha (anger), lobha (greed), Bhaya (fear), Harsha (happiness), Dharm (righteous conduct), Smruti (memory), Buddhi(intellect), Iccha(feelings), Dwesh(jealousy), Prayatna (efforts), sukha (happiness), Dukkha(sadness), Ayu (life), and Atmadnyana (Self-realisation)

Satmyaja Factors ^{284, 285, 286} – Ayu(Life), aarogya(Health), Analasya(Energy), Alolupta, Indriyaprasad (clarity of senses), Swar-Varna-Oojaprashasti(excellence in voice, complexion and vitality), Praharsha(feeling of happiness), Medha(intellect) and Bala(strength).

Rasaja(Aaharaja) Factors ^{287, 288, 289} – Dehasambhava Vrutti(Formation of foetus), Vruddhi(Growth of the foetus), Trupti(satiety), Achapalata (Activity of the foetus), Pushti(nourishment of the foetus), Utsaha(Happiness).

Psychological Factors ²⁹⁰ – Shaucha (purity), Astikaya (piousness), Krutadnyata (gratitude), Dakshinya (Charity), vyavasaya (industriousness), Shaurya(bravery),

Gambhirya (composure), Buddhi(intellect),Medha(Knowledge), Smruti(memory) etc.are the psychological characteristics of the foetus formed due to satva guna.

Durupacharata (who is imperceptible), Anryatva, Shaurya(bravery), Matsarya (Enviousness), Atibhashita (talkativeness), Dambha(arrogance), Mana(Ego), Krodha (Anger) , Harsha and Kama are the psychological characteristics of the foetus formed due to rajas guna.

Adnyana (ignorance), Vishada(melancholy), Pramada(incorrect behavior) , Nidra(sleep), Aalasya(lethargy), Kshudha(hunger), Trushna(thirst), Shoka(grief), Matsarya (jealousness) are the psychological characteristics of the foetus formed due to Tamas guna.

Thus the factors responsible for conception and healthy foetus are ideal shukra, ideal artava, normal uterus, atma , mana and rasa formed from habitual diet taken by the mother .In short the foetus is formed due to six factors viz. Matruj,Pitruj,Atmaja ,Satmyaja,Rasaja and Mana(mind).Of these, four factors Matruja, Pitruj, Atmaja and Mana are cause for conception. Rasaja and Satmyaja can be described as environmental factors.

Role of These Factors in Causation of Disease ²⁹¹

Acharya Charak states that the normal factors which are responsible for creation of human being are also responsible for creating disease when they become abnormal.

Abnormal Characteristics of Foetus ²⁷⁴

When shukra is vitiated totally, conception does not occur. But when it is partly vitiated it causes deformity in that part of the organ. The aggravated dosha in that particular part creates deformity.e.g- If there is deformity in the beejabhaga related to sight the child thus born will be blind.

Causes for a deformed Foetus ²⁹²

- Due to deformity in the beeja i.e shukra or aartav (sperm or ovum)
- Due to bad deeds in the past life
- Due to defect or disorder in the aashaya

- Improper rutu kala
- Due to unhealthy diet taken by the mother during pregnancy

These can lead to imbalance in the doshas thus causing deformities in the shape, appearance or in the structure or function of the indriyas. Just as a tree fallen in a river during storm gets carried away with vigorous force gets mutilated, in the same way a foetus gets deformed due to imbalanced doshas.

What causes abnormalities in a foetus?

If there is any deformity in the Garbhotpadaka Beeja (ovum) or even in a part of the beeja it is carried onto the foetus i.e the fraction of the beeja affected creates deformity in the part which is formed by it. If there is no deformity in the beeja or beejabhaga the foetus thus formed is normal²⁹³.

Congenital Abnormality - When a woman takes doshaprakopaka Aahar, the aggravated doshas spread in the body and may affect Rakta (blood) and Garbhashaya (uterus) but only partly. This can cause deformity in either the Matruj or Pitruj avayava. The affected part of the beeja or beejabhag caused due to aggravation of the dosha creates deformity in that part of the organ or the organ itself.

Congenital Abnormalities²⁹⁴

Pathophysiology of deformity in the foetus²⁹⁴:

Doshaprakopak aahar taken by the pregnant female



Spread of aggravated of doshas in the body



May affect Rakta and Garbhashaya but only partly



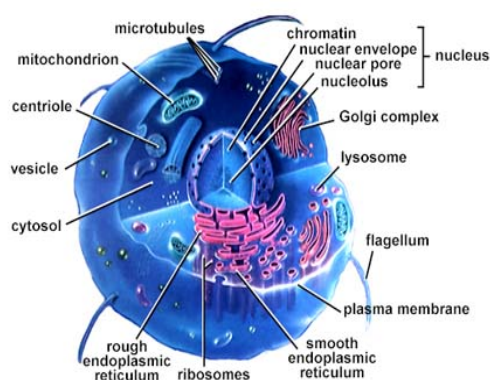
Can cause deformity in either Matruja or Pitruj avayava



Affected part of the the beeja or beejabhag caused due to aggravation of the dosha creates deformity in that part of the organ or the organ itself.

CELL

Fig.13. Structure of Cell



Cell is a basic building blocks of all living things.

The human body is composed of trillions of cells. They provide structure for the body, take in nutrients from food, convert those nutrients into energy, and carry out specialized functions. Cells also contain the body's hereditary material and can make

copies of themselves.

Cells have many parts, each with a different function. Some of these parts, called organelles, are specialized structures that perform certain tasks within the cell. Each cell has a control center called *nucleus*. The nucleus contains the information that tells the cell what to do and when to grow and divide. This information comes in the form of *genes*, which are contained in *chromosomes*. In the nucleus of most human cells (except for sperm and egg cells), there are 23 pairs of chromosomes. Chromosomes are passed from parents to their children. One chromosome of each pair is inherited from the mother, and the other comes from the father. This is why children look like their parents, and why they may have at end encyto develop certain diseases that run in their families.

With in each chromosome, there are many hundreds to thousands of genes. Genes and chromosomes are made up of long strands of a substance called *DNA* (deoxyribo nucleic acid). DNA, or deoxyribonucleic acid, is the hereditary material in humans and almost all other organisms. Nearly every cell in a person's body has the same DNA. Human DNA consists of about 3 billion bases, and more than 99 percent of those bases are the same in all people. The order, or sequence, of these bases determines the information available for building and maintaining an organism. DNA, along with the instructions it contains, is passed from adult organisms to their offspring during reproduction.

Each gene is made up of a specific DNA sequence that contains the code (the instructions) for that gene's function. Genes tell the cell what to do.

Many genes tell the cell to make a certain protein that has a specific job or function in the body. Other genes help regulate how much protein another gene makes. Each human cell has about 25,000 genes.

A cell uses its genes selectively; that is, it can turn on (or activate) the genes it needs at the right moment and turn off other genes that it doesn't need. Turning on some genes and turning off others is how a cell becomes specialized. That is how a cell becomes a muscle cell and not a bone cell, for example. Some genes stay active all the time to make proteins needed for basic cell functions. Others shut down when their job is finished and start again later if needed.

Genes, as the basic units of heredity, serve 2 major roles in cancers: some are part of the development of cancer and others protect the body from cancer.

Genetic Mutations

Each chromosome can contain hundreds or thousands of genes that are passed from the parents to the child. Every cell in the body has all of the genes you were born with. Although all cells have the same genes and chromosomes, different cells (or types of cells) may use different genes.

Genes are made up of DNA. The arrangement of the DNA bases determines the gene and its function. Mutations are gene defects. They are abnormal changes in the DNA of a gene. Mutations involve changes in the arrangement of the bases that make up a gene. Even a change in just one base among the thousands of bases that make up a gene can have a major effect.

A mutation can affect the cell in many ways. Some mutations stop a protein from being made at all. Others may change the protein that is made so that it no longer works the way it should or it may not even work at all. Some mutations may cause a gene to be turned on, and make more of the protein than usual. Some mutations don't have a noticeable effect, but others may lead to a disease. For

example, a certain mutation in the gene for hemoglobin causes the disease, sickle cell anemia.

Mutations can be Hereditary or Acquired.

Hereditary mutations

Hereditary mutations (also called *germline mutations*) are gene defects that are passed from a parent to child. Hereditary mutations are present in the egg or sperm that join during fertilization and develop into a fetus. Because the mutation is present at the beginning, it exists in all cells of the body, including reproductive cells (the cells that make sperm in males or the egg cells in females). This means the mutation can be passed from generation to generation.

A hereditary mutation is a major factor in about 5% to 10% of all cancers.

Some people are more likely to develop cancer than others simply because they are born with mutations in their genes.

Acquired mutations

Most cancers are caused by DNA changes that happen during the person's life. These are called *acquired*, *sporadic*, or *somatic* mutations. An acquired mutation can be caused by things in the environment such as exposure to radiation or toxins. But for most acquired mutations, no specific cause can be found.

Unlike the inherited mutations, acquired mutations start in one cell of the body and are found only in the offspring of that cell. They are not in every cell of the body. Because they are not in the reproductive cells, acquired mutations cannot be passed on to the next generation.

It is important to realize that mutations in our cells happen all the time. Usually, the cell detects the change and repairs it. If it can't be repaired, the cell will get a signal telling it to die in a process called *apoptosis*. But if the cell doesn't die and the mutation is not repaired, it may lead to a person developing cancer. This is

more likely if the mutation affects a gene involved with cell division or a gene that normally causes a defective cell to die.

We have 2 copies of each gene (one from each chromosome in a pair). So, even when a person inherits a mutation, at least one more mutation is needed to "knock out" the other copy of that gene (so that it doesn't function). This acquired mutation is needed before a person develops a heredity-related cancer. Sometimes acquired mutations in other genes (such as oncogenes) are needed as well. For a person who is not born with a mutation, 2 acquired mutations (one in each copy of the same gene) are needed to knock out that gene.

Role of Gene mutations in carcinogenesis

The 2 main types of genes that play a role in cancer are *oncogenes* and *tumor suppressor genes*.

Oncogenes

Most oncogenes are mutations of certain normal genes called *proto-oncogenes*. Proto-oncogenes are the "good" genes that normally control what kind of cell it is and how often it divides. When a proto-oncogene mutates (changes) into an oncogene, it becomes a "bad" gene that can become permanently turned on or activated when it is not supposed to be. When this happens, the cell grows out of control, which can lead to cancer.

A proto-oncogene normally helps the cell grow and divide. An oncogene causes the cell to divide out of control.

Inherited mutations of oncogenes

A few cancer syndromes are caused by inherited mutations of proto-oncogenes that cause the oncogene to be turned on (activated). For example, multiple endocrine neoplasia type 2 (MEN2) is caused by an inherited mutation in the gene called *RET*. People affected by this syndrome often develop an uncommon thyroid cancer called medullary cancer of the thyroid. They also develop other tumors, including pheochromocytoma and nerve tumors. Inherited mutations in the

gene called *KIT* can cause hereditary gastrointestinal stromal tumors (GISTs). And inherited mutations in the gene called *MET* can cause hereditary papillary renal cancer.

Acquired mutations of oncogenes

Most cancer-causing mutations involving oncogenes are acquired, not inherited. They generally activate oncogenes by chromosome rearrangements, gene duplication, or mutation. For example, a chromosome rearrangement can lead to formation of the gene called *BCR-ABL*, which leads to chronic myeloid leukemia (CML). Acquired mutations that activate the *KIT* gene cause most cases of gastrointestinal stromal tumor (GIST).

Tumor suppressor genes

Tumor suppressor genes are normal genes that slow down cell division, repair DNA mistakes, or tell cells when to die (a process known as *apoptosis* or *programmed cell death*). When tumor suppressor genes don't work properly, cells can grow out of control, which can lead to cancer. Many different tumor suppressor genes have been found, including *TP53(p53)*, *BRCA1*, *BRCA2*, *APC*, and *RBI*.

A tumor suppressor gene normally keeps the cell from dividing too quickly. When something goes wrong with the gene, such as a mutation, cell division can get out of control.

An important difference between oncogenes and tumor suppressor genes is that oncogenes result from the *activation* (turning on) of proto-oncogenes, but tumor suppressor genes cause cancer when they are *inactivated* (turned off).

Inherited mutations of tumor suppressor genes

BRCA1 and *BRCA2* are human genes that produce proteins to help repair damaged DNA and, therefore, play a role in ensuring the stability of the cell's genetic material. When either of these genes is mutated, or altered, such that its protein product is not made or does not function correctly, DNA damage may not be repaired properly. As a result, cells are more likely to develop additional genetic alterations that can lead to cancer.

Specific inherited mutations in *BRCA1* and *BRCA2* increase the risk of female breast and ovarian cancers, and they have been associated with increased risks of several additional types of cancer. Together, *BRCA1* and *BRCA2* mutations account for about 20 to 25 percent of hereditary breast cancers and about 5 to 10 percent of all breast cancers. In addition, mutations in *BRCA1* and *BRCA2* account for around 15 percent of ovarian cancers overall. Breast cancers associated with *BRCA1* and *BRCA2* mutations tend to develop at younger ages than sporadic breast cancers.

A harmful *BRCA1* or *BRCA2* mutation can be inherited from a person's mother or father. Each child of a parent who carries a mutation in one of these genes has a 50 percent chance of inheriting the mutation. The effects of mutations in *BRCA1* and *BRCA2* are seen even when a person's second copy of the gene is normal.

A woman's lifetime risk of developing breast and/or ovarian cancer is greatly increased if she inherits a harmful mutation in *BRCA1* or *BRCA2*. About 12 percent of women in the general population will develop breast cancer sometime during their lives. By contrast, according to the most recent estimates, 55 to 65 percent of women who inherit a harmful *BRCA1* mutation and around 45 percent of women who inherit a harmful *BRCA2* mutation will develop breast cancer by age 70 years.

Acquired mutations of tumor suppressor genes

Tumor suppressor gene mutations have been found in many cancers. Most of these mutations are acquired, not inherited. For example, abnormalities of the *TP53* gene (which codes for the p53 protein) have been found in more than half of human cancers. Acquired mutations of this gene appear in a wide range of cancers, including lung, colorectal, and breast cancer. The p53 protein is involved in the pathway to apoptosis. This pathway is turned on when a cell has DNA damage that can't be repaired. If the gene for p53 is not working properly, cells with damaged DNA continue to grow and divide. Over time this can lead to cancer.

Acquired changes in many other tumor suppressor genes also contribute to the development of sporadic (not inherited) cancers.

Use of oncogenes and tumor suppressor genes to prevent cancer

As mentioned before, some gene changes (mutations) can be inherited, which can increase your risk of developing cancer. Some mutations in oncogenes and tumor suppressor genes have been found often enough to be useful in helping decide which people are at higher risk for developing certain types of cancers.

A person who has family members with certain cancers known to be caused by genetic mutations, might find it helpful to know if he/she also has the mutation. Genetic testing can be used to look for such mutations.

In the genetic testing if a certain gene mutation is seen, some steps can be taken to minimize the risk. For example, women who carry a mutation in one of the *BRCA* genes have a high risk of getting breast cancer. These women are advised to start screening for breast cancer at a younger age and to consider screening with MRI along with mammography to help find breast cancer early. Some of these women even have surgery to lower their risk of cancer.

Use of oncogenes and tumor suppressor genes in guidance on treatment of cancer

In some cases, specific gene changes help predict which patients are likely to have a better or worse outlook or which patients are likely to benefit from certain treatments.

For example, *HER2/neu* is a proto-oncogene present in normal cells. It becomes an oncogene when a cell has too many copies of this gene. When this happens, the cells make too much HER2/neu protein. Many years ago, experts realized that patients with breast cancer with cells that have too much HER2/neu protein had a worse outcome than patients whose cancer cells have normal amounts. Cancers with too much of this protein did not respond as well to certain chemotherapy drugs, so now other drugs are used. Drugs were also designed to specifically attack cells with too much HER2/neu.

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MATERIALS & METHODOLOGY

Materials :

- Selection of patients having a confirmed diagnosis of Breast Cancer through modern parameters like mammogram, USG of breast, FNAC, excision Biopsy etc.
- References regarding Aahar from Ancient texts on Ayurveda
- References regarding Anuvanshikta from Ancient texts on Ayurveda
- References from various Medical Journals regarding dietary risk factors
- References from various Medical Journals regarding genetics
- Information on risk factors of Breast Cancer using modern technology
- Specially designed questionnaire to study the role of Dietary factors & Heredity in causing Dushta stanarbud.
- A retrospective study was done to study Aahar hetu.
- Statistical Analysis of the Data was done by using odds ratio statistical technique.

Methods :

Criteria for Inclusion:

- Patients having a confirmed diagnosis of Breast Cancer through biopsy, HPR and other diagnostic technique
- All types of Breast Cancer were included for study.
- All grades of Breast Cancer were included for study
- Patients having history of only Aahar hetu (dietary factor)
- Patients having history of only Anuvanshikta hetu(heredity factor) amongst blood relations
- Patients having history of both ,Anuvanshikta hetu(heredity factor) of any type cancer and Aahar hetu(dietary factors).

Criteria for Exclusion:

- Male patients diagnosed as Breast Cancer
- Patients unable to elicit the detail history regarding the disease
- Critically ill patients unable to elicit history

Plan of Work:

- A detail history of patient suffering from Dushta Stanaarbuda of stana (Ca Breast) was taken. Compilation of data about Aahar (Diet) in the patient suffering from Dushta Stanaarbud .
- Structured questionnaire was prepared for the study of detail information of the various dietary habits of the patients.

Following variables were studied with respect to Quantity and frequency of the Food -items. –

1. Six Rasa – Madhura, Amla, Lavana, Katu, Tikta, Kashaya
2. Ushna and Sheeta Veerya
3. Guru and Laghu guna
4. Snigdha and Ruksha guna
5. Paryusheetanna (Stale food)
6. Virudhhahara
7. Bakery products
8. Fermented food
9. Vegetarian and Non vegetarian food
10. Atyashana
11. Adhyashana

The Aahar data thus collected was compiled.

Compilation of the data about the Anuvanshikta (Heredity) of any type cancer in the patient suffering from Dushta Stanaarbud .

1. Only Matruj & Pitruj Bhava were taken up for study Atmaja, Satmyaja, Rasaja and Satvaja were not taken up for study.
2. The following variables were studied :

-
- a. Maternal Variables: Grandmother-Grandfather, Mother, Maternal Aunt, Maternal Uncle
 - b. Paternal Variables: Grandmother-Grandfather, Paternal Aunt, Paternal Uncle
 - c. Siblings: Brother or Sister suffering from same type or other type of Cancer
 - d. Next generation: son-daughter or nephew-Niece suffering from same type or other type of Cancer.
3. History of heredity up to past three generations was taken into consideration

Sample size : 240 patients –

These were divided into three groups of 80 patients -

- i) Patients having history of only Aahar Hetu
 - ii) Patients having history of only Anuvanshikta
 - iii) Patients having history of both Aahar and Anuvanshikta
4. Comparison was done between patients having only Aahar Hetu and only Anuvanshikta
Hetu with respect to progression of Breast Cancer
 5. Comparison was done between patients having only Aahar Hetu and both Aahar and Anuvanshikta Hetu with respect to progression of Breast Cancer
 6. Comparison was done between patients having only Anuvanshikta Hetu and both Aahar and Anuvanshikta Hetu with respect to progression of Breast Cancer.

OBSERVATIONS AND RESULTS

Observations:

Table 7. Gradewise

	Aahar	%	Anuvanshikta	%	Aahar + Anuvanshikta	%
Grade II	25	31%	17	21%	30	38%
Grade III	55	69%	63	79%	50	62%
Total	80	100	80	100	80	100

Out of 240 patients 168(70%) patients had been diagnosed with Grade III & 72 (30%) patients were diagnosed with Grade II cancer of the breast.

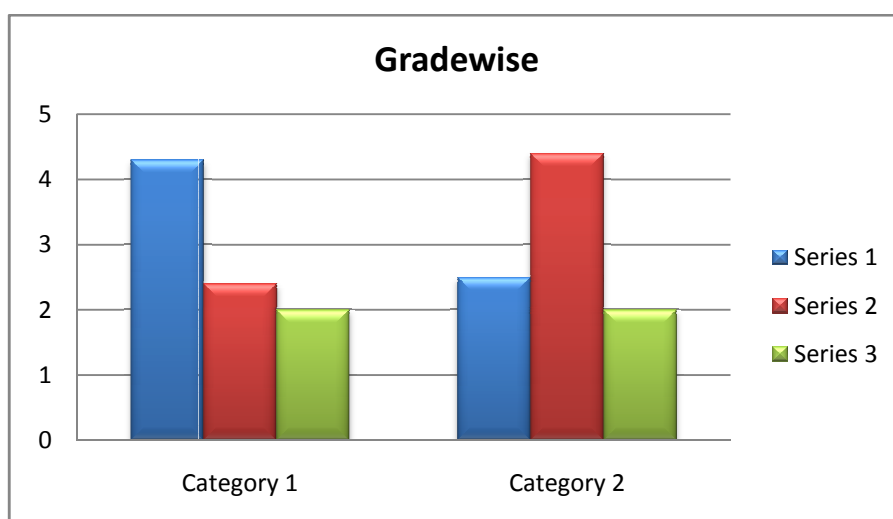


Table 8. Stage wise

Stage	Aahar	%	Anuvanshikta	%	Aahar + Anuvanshikta	%
I	11	14%	08	10%	11	14%
II	39	49%	48	60%	41	51%
III	20	25%	14	18%	24	30%
IV	10	12%	10	12%	04	05%
Total	80	100	80	100	80	100

Out of 240 patients 30(12.5 %) patients were of Stage I,128(53.3%) patients were of stage II ,58(24.16%) patients were of stage III,24(10%) patients were of Stage IV

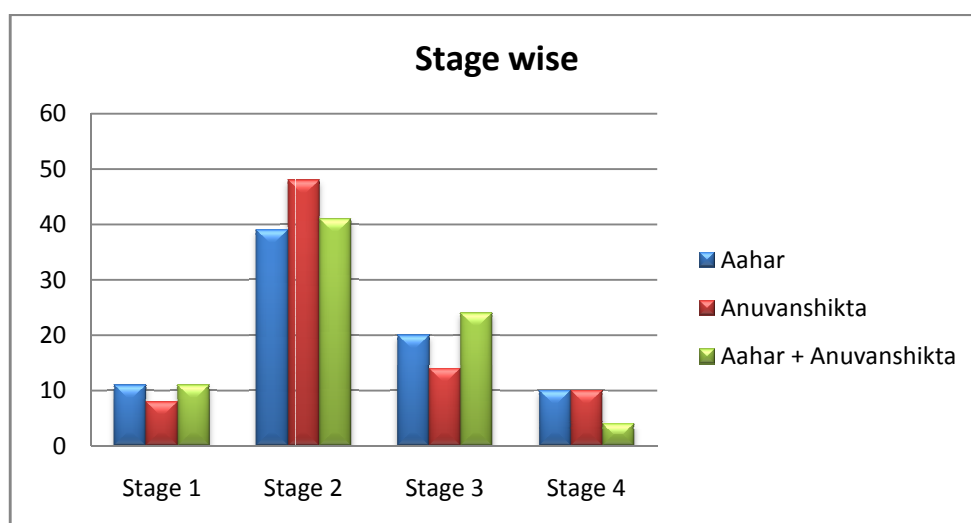
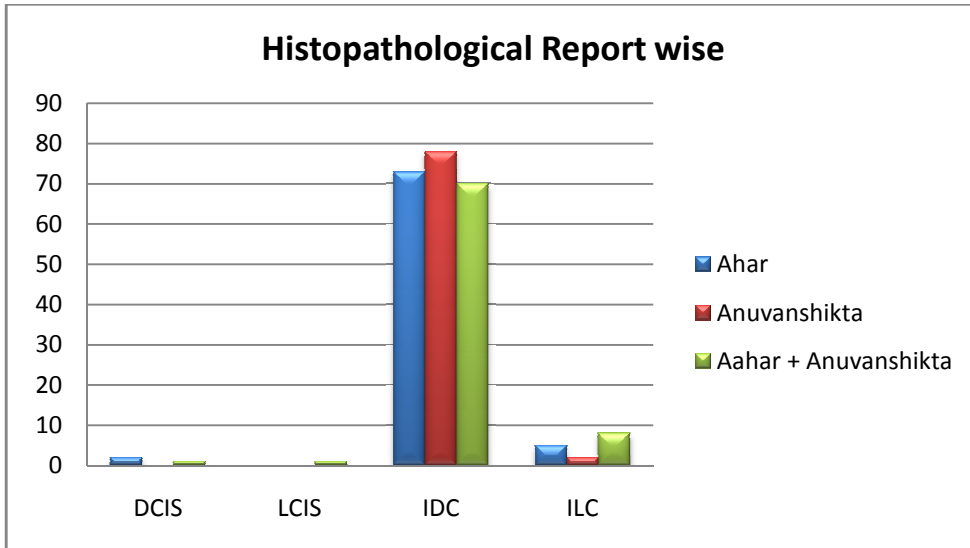


Table 9. Histopathology Report wise

	AaharHetu	%	Anuvanshika	%	Aahar + Anuvanshika	%
DCIS	02	03 %	00	00 %	01	01 %
LCIS	00	00 %	00	00 %	01	01 %
IDC	73	91 %	78	98 %	70	88 %
ILC	05	06%	02	02 %	08	10 %
Total	80	100	80	100	80	100

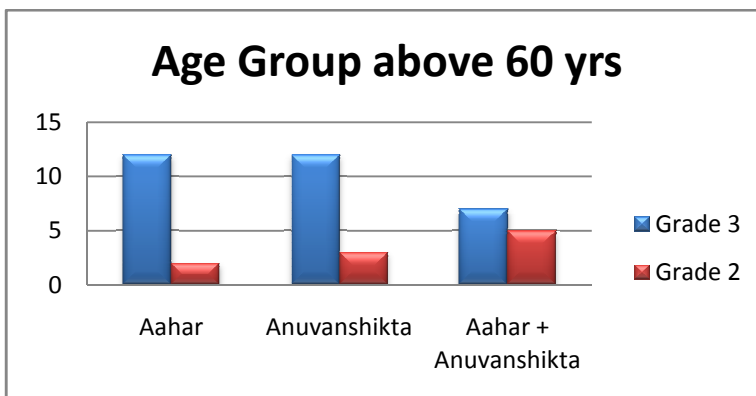
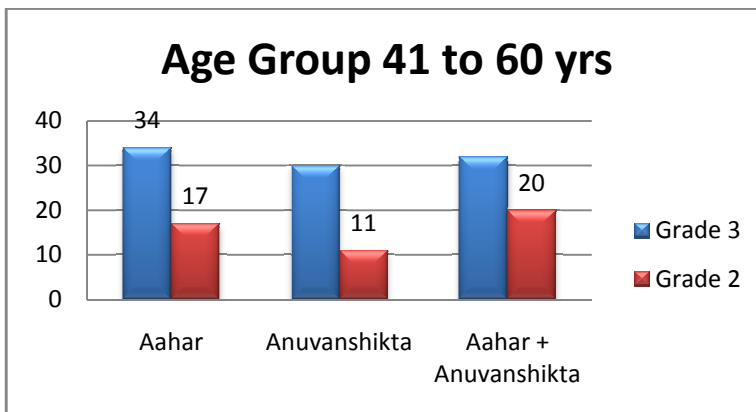
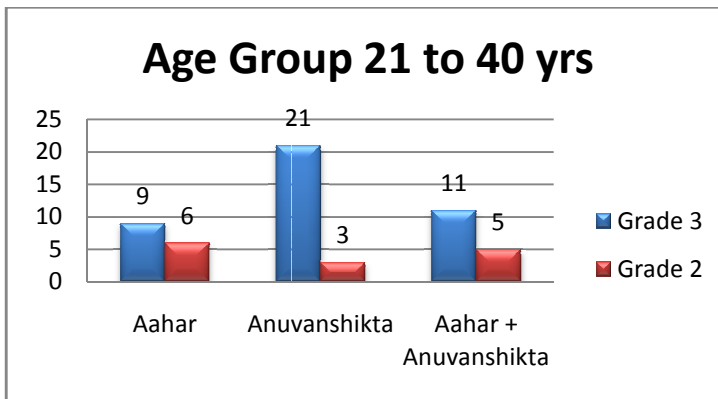
Out of 240 patients 3(1%) patients were of Ductal carcinoma in situ(DCIS), 1 patient (1%) of Lobular carcinoma in situ(LCIS), 221(92%) patients were of Infiltrating Duct carcinoma(IDC) while 15 (6%) patients were of Infiltrating Lobular carcinoma(ILC).



- To study the role of AaharHetu and Anuvanshikta as causative factors in DushtaStanarbud (Breast Cancer)

Table 10. Cross tabulation of the causative factors ,Grade and Age group was done

Factor x Grade x AgeGroup Crosstabulation				
AgeGroup	Factor	Grade		Total
		Grade3	Grade 2	
21 to 40	Aahar	9	6	15
	Anuvanshikta	21	3	24
	Aahar + Anuvanshikta	11	5	16
41 to 60	Aahar	34	17	51
	Anuvanshikta	30	11	41
	Aahar + Anuvanshikta	32	20	52
Above 60	Aahar	12	2	14
	Anuvanshikta	12	3	15
	Aahar + Anuvanshikta	7	5	12



Observation:

- When cross tabulation between the three groups viz. AaharHetu, AnuvanshiktaHetu and Aahar + AnuvanshiktaHetu(in combination) was done it was observed that Anuvanshikta is a prominent causative factor for Grade3 across all age groups.
- Age Group 41 to 60 is more exposed to disease.
Aaharand Anuvanshikta stand to be independent potential risk factors for the causation of the disease.

- **To study the role of dietary factors contributing for occurrence of DushtaArbud of Stana(Ca breast).**

To understand the role of Dietary factors responsible in progression of DushtaStanarbud statistical technique of cluster analysis was applied. Cluster Analysis is an exploratory data analysis technique. It is a classification tool in which cases, data, or objects (events, people, things, etc.) are sub-divided into groups (clusters) such that the items in a cluster are very similar (but not identical) to one another and very different from the items in other clusters. It is a discovery tool that reveals associations, patterns, relationships, and structures in masses of data. In our case we cluster the variables listed below based on their Grade2 and 3 observed frequencies. Our objective for cluster analysis was to form clusters that show similar pattern in occurrence(frequencies) for both Grade2 and Grade3. To decide on the role of clustered attributes in favoring the disease.

Table 11. List of Variables under study for Aahar and Aahar+Anuvanshikta study.

Main Variable	Class Considered
Rasaatiyog	Madhur
	Amla
	Lavan
	Katu
	Tikta
	Kashaya
Veeryatah	Ushna
	Sheetah
	Ushna+Sheetah
Karmatah	Vishatambi
	Viddahi
	Abhishyandi
	Vishatambi+Viddahi
	Viddahi+Abhishyandi
	Vishatambi+Abhishyandi
	Vishtambi+Viddahi+Abhishyandi
AaharPrakar	Shakahara
	Mansahar

Main Variable	Class Considered
	Mishrahar
AshnaPrakar	Uposhna
	AtiBhojana
	Adhyashana
	Samashana
	Vishamashana
	Viruddhashana
	Paryushitanna
AnuktaPrakar	Preservatives
	Bakery
	Fermented
	Preserv+Bakery
	Preserv+Fer
	Bakery+Fer
	Preservatives+Baker+Fermented
	SoftDrinks
	IceCream
	SoftDrinks+IceCream

Table 12. Cluster Membership observed in Only AaharHetu:

Cluster1	Cluster2	Cluster 3	Cluster 4	Cluster5
Moderate association	Major association	Strong association	Weak Association	Poor Association
Madhur	Amla	AtiBhojana	Kashaya	Tikta
Viddahi + Abhishyandi	Lavan	Viruddhashana	Ushna+Sheetah	Sheetah
Shakahara	Katu	Paryushitanna	Viddahi	Vishatambi
Mansahar	Ushna	Bakery	Vishatambi + Viddahi	Abhishyandi
Adhyashana			Vishtambi + Viddahi + Abhishyandi	Vishatambi + Abhishyandi
Samashana			Mishrahar	Preservatives
Vishamashana			Uposhna	Fermented

Cluster1	Cluster2	Cluster 3	Cluster 4	Cluster5
			Bakery + Fermented	Preservative + Bakery
				Preservative + Fermented
				Preservatives + Baker + Fermented
				Soft Drinks
				Ice Cream
				Soft Drinks + Ice Cream

Table 13.Cluster Membership in Aahar + Anuvanshikta as Hetu:

Cluster1	Cluster2	Cluster3	Cluster4	Cluster5
Moderate association	Major association	Strong association	Weak association	Poor Association
Madhur	Amla	Lavan	Ushna + Sheetah	Tikta
Viddahi + Abhishyandi	Katu	Ushna	Viddahi	Kashaya
Shakahara		AtiBhojana	Mishrahar	Sheetah
Mansahar		Viruddhashana	Uposhna	Vishatambi
Vishamashana		Paryushitannas	Adhyashana	Abhishyandi
Bakery			Samashana	Vishatambi + Viddahi
				Vishatambi + Abhishyandi
				Vishtambi + Viddahi + Abhishyandi

Cluster1	Cluster2	Cluster3	Cluster4	Cluster5
				Preservatives
				Fermented
				Preservatives + Bakery
				Preservatives + Fermented
				Bakery + Fermented
				Preservatives + Bakery + Fermented
				Soft Drinks
				Ice Cream
				Soft Drinks + Ice Cream

It was observed that cluster 2 & 3 of Aaharhetu and Aahar + Anuvanshikta had strong association in causation of Dushta Stanarbud.

Table.14 a.Cluster 2 of Aahar Hetu

Attribute	Grade2	Grade3
Amla	17	44
Lavan	21	40
Katu	18	44
Ushna	18	38

Attributes in Cluster 2 majorly favor the disease.

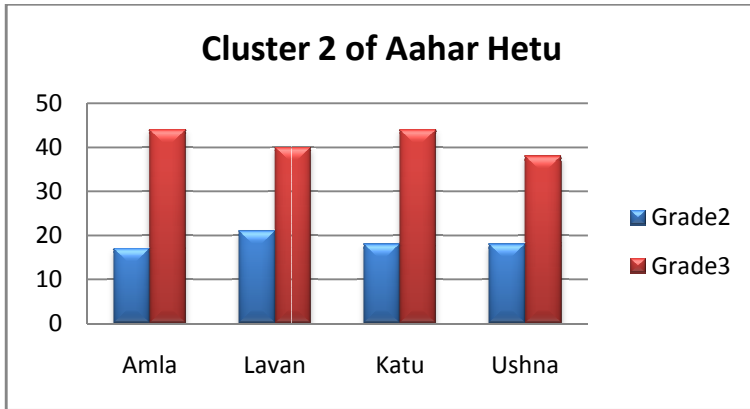


Table 14 b. Cluster 3 of AaharHetu

Attribute	Grade2	Grade3
AtiBhojana	14	37
Viruddhashana	14	29
Paryushitanna	13	31
Bakery	15	29

Attributes in Cluster 3 strongly favor Grade2 and Grade3.

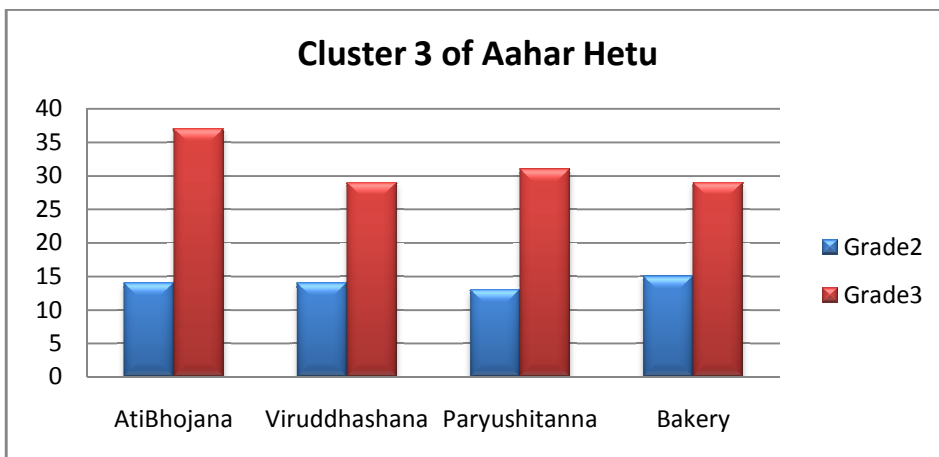


Table 15 a. Cluster 2 Aahar + AnuvanshiktaHetu

Attributes	Grade 2	Grade3
Amla	29	44
Katu	26	44

Attributes in Cluster 2 majorly favor the disease.

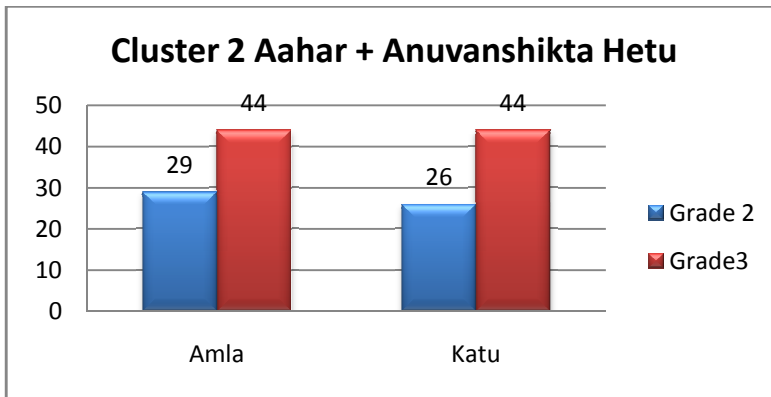
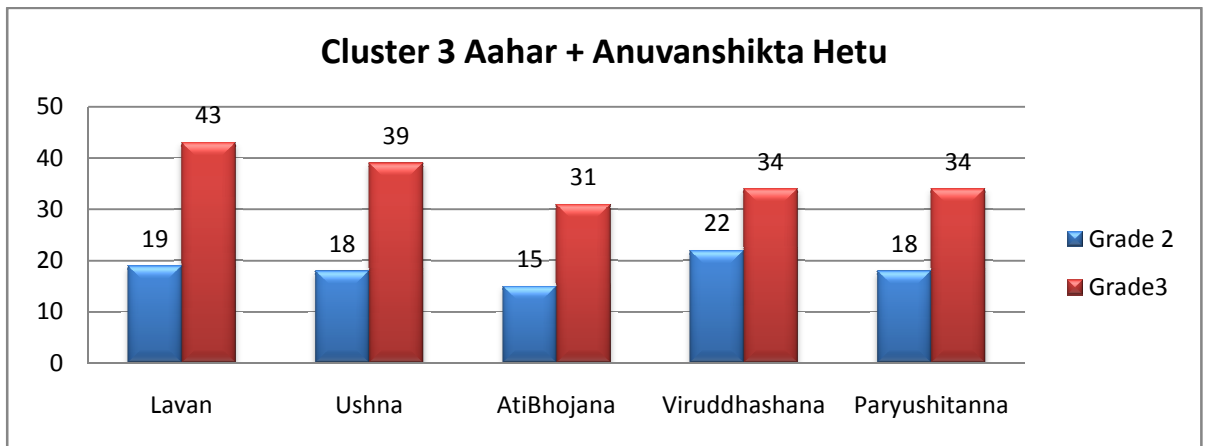


Table 15 b. Cluster 3 Aahar + AnuvanshiktaHetu

Attributes	Grade 2	Grade3
Lavan	19	43
Ushna	18	39
AtiBhojana	15	31
Viruddhashana	22	34
Paryushitanna	18	34

Attributes in Cluster 3 strongly favor the disease.



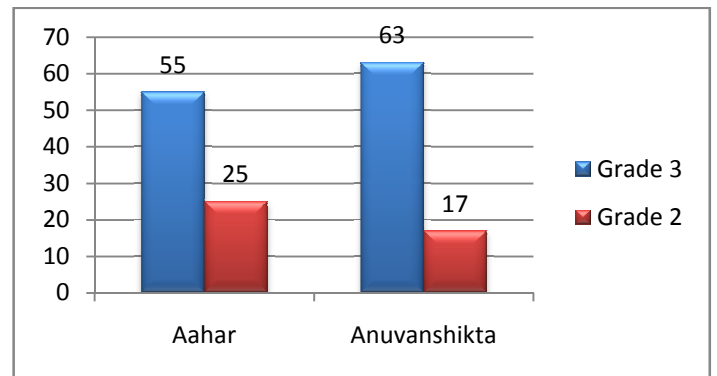
- **To compare the role of AaharHetu and AnuvanshiktaHetu as individual causative factors in progression of DushtaStanarbuda (Breast Cancer)**

For this study, Odds ratio Statistical Technique was used.

Comparison of 2 groups –Only AaharHetu& Only AnuvanshiktaHetu

Table16 a. Comparison 2 groups Aahar & Anuvanshikta with respect to Grade

	Grade 3	Grade 2
Aahar	55	25
Anuvanshikta	63	17

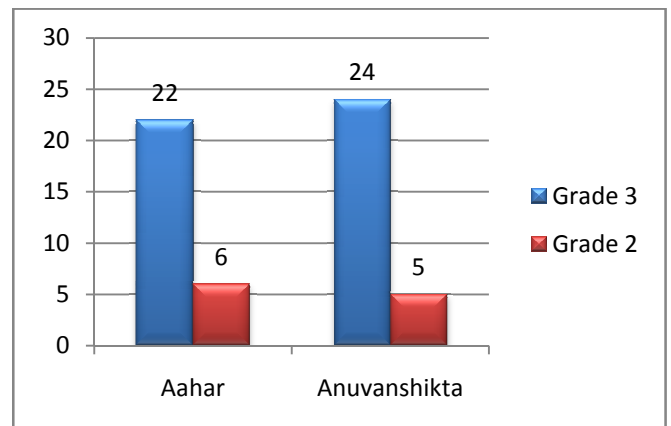


Odds Ratio = 0.593651

Odds of Grade 3 for Aahar are 40% lower than the odds of Grade 3 for Anuvanshikta. Hence Anuvanshikta shows more exposure to grade III of Breast cancer.

Table 16.b. Comparison of 2 groups Aahar&Anuvanshikta with respect to Lymph Node Metastasis

	Grade 3	Grade 2
Aahar	22	6
Anuvanshikta	24	5

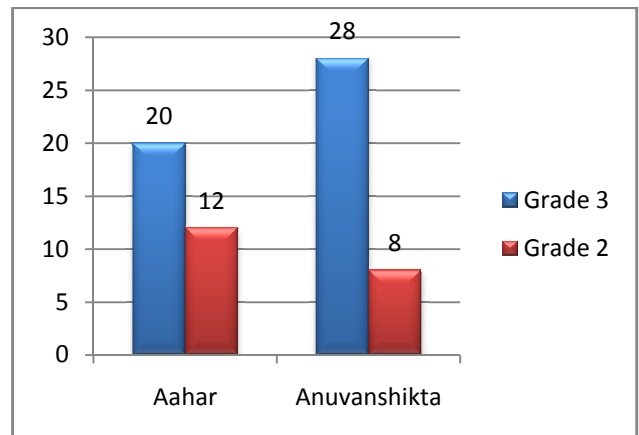


Odds Ratio = 0.763888

Odds of Grade 3 for Aahar are 24% less than odds of Grade 3 for Anuvanshikta.

Table 16.c. Comparison of 2 groups Aahar and Anuvanshikta with respect to Distal Metastasis

	Grade 3	Grade 2
Aahar	20	12
Anuvanshikta	28	8



Odds Ratio =0.476190

Odds of Grade 3 for Aahar are 52 % less than odds of Grade 3 for Anuvanshikta

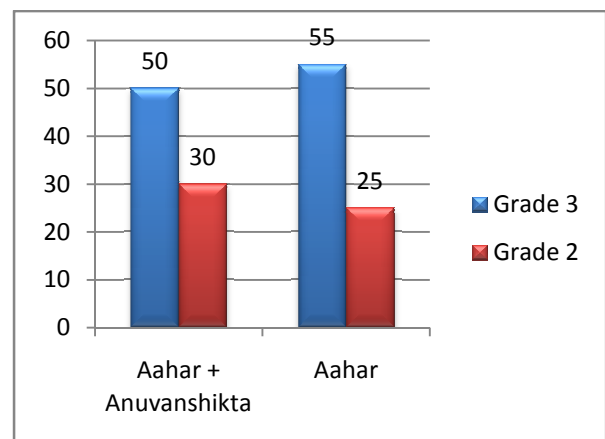
In the present study it is observed that Anuvanshikta shows more exposure for Grade 3 Breast cancer.

- **To compare the role of individual AaharHetu and Aahar&Anuvanshikta in combination as causative factors in progression (grade) of DushtaStanarbuda (Breast Cancer)**

Table 17. a. Comparison of 2 groups – Aahar and Aahar + Anuvanshikta v/s Grade

	Grade 3	Grade 2
Aahar + Anuvanshikta	50	30
Aahar	55	25

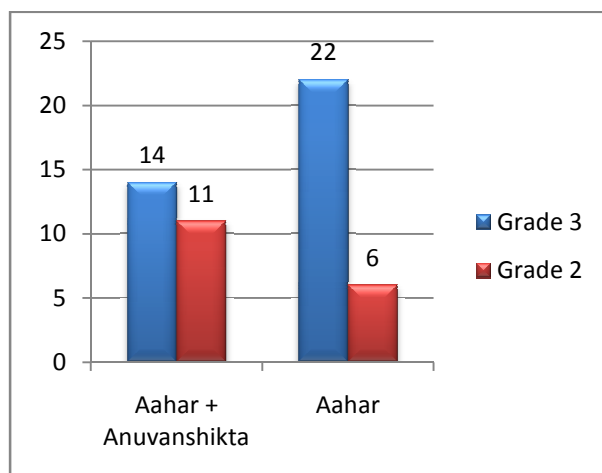
OR = 0.757576



Odds for Grade 3 for Aahar + Anuvanshikta in combination are 24% lower than odds of Grade 3 for Aahar.

Table 17 b. Comparison of 2 groups Aahar & Aahar + Anuvanshikta in combination with respect to LN Mets

	Grade 3	Grade 2
Aahar + Anuvanshikta	14	11
Aahar	22	6

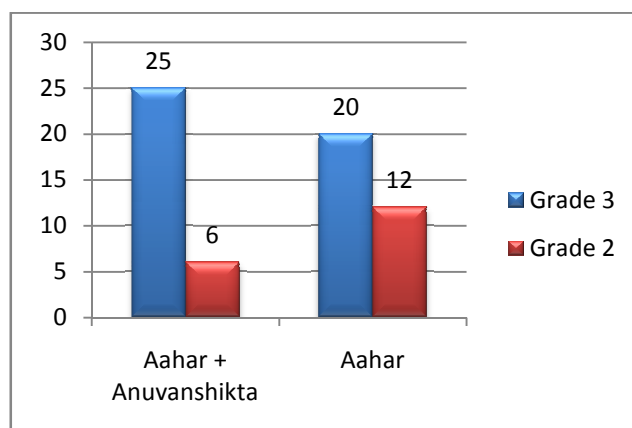


Odds Ratio = 0.347107

Odds of Grade 3 for Aahar + Anuvanshikta are 65% less than odds of Grade 3 for Aahar.

Table 17 c. Comparison of 2 groups Aahar & Aahar + Anuvanshikta with respect to Distal Metastasis

	Grade 3	Grade 2
Aahar + Anuvanshikta	25	6
Aahar	20	12



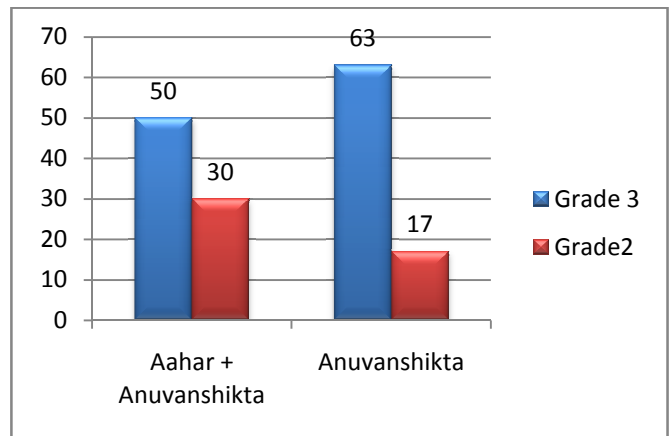
Odds Ratio = 2.5

Odds of Grade 3 for Aahar + Anuvanshikta are 2.5 times more than odds of Grade 3 for Aahar.

- To compare the role of individual AnuvanshiktaHetu and Aahar&Anuvanshikta in combination as causative factors in progression (grade) of DushtaStanarbuda.

Table 18 a. Comparison of 2 groups Anuvanshikta and Aahar+Anuvanshikta v/s Grade

	Grade 3	Grade2
Aahar + Anuvanshikta	50	30
Anuvanshikta	63	17

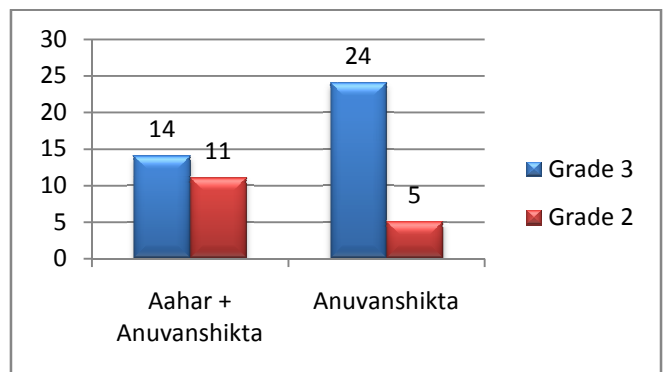


OR = 0.449735

Odds for Grade 3 for Aahar + Anuvanshikta in combination are 55% lower than odds of Grade 3 for Anuvanshikta.

Table 18 b. Association of 2 groups Anuvanshikta&Aahar + Anuvanshikta in combination with respect to LN Mets

	Grade 3	Grade 2
Aahar + Anuvanshikta	14	11
Anuvanshikta	24	5

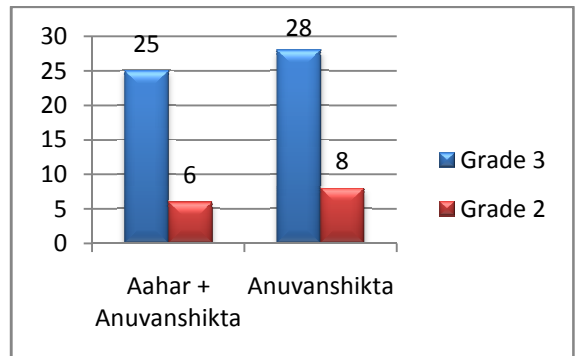


Odds Ratio = 0.265151

Odds of Grade 3 for Aahar + Anuvanshikta are 73% less than odds of Grade 3 for Anuvanshikta

Table 18 c. Association of 2 groups Anuvanshikta and Aahar + Anuvanshikta with respect to Distal Metastasis

	Grade 3	Grade 2
Aahar + Anuvanshikta	25	6
Anuvanshikta	28	8



Odds Ratio = 1.190476

Odds of Grade 3 for Aahar + Anuvanshikta are 19 % more than odds of Grade 3 for Anuvanshikta.

DISCUSSION

- **Discussion on Gradewise distribution of patients in the three groups viz. Aahar, Anuvanshikta, Aahar & Anuvanshikta in combination**

A total of 240 patients was taken up for study which were divided into 3 groups. Out of these 240 patients 168(70%) patients had been diagnosed with Grade III & 72 (30%) patients were diagnosed with Grade II cancer of breast.

Observation of further groupwise distribution showed the following results:

Out of 80 patients of Aahar hetu 55(69%) were of Grade III and 25 (31%) were of grade II; in Anuvanshikta hetu group 63(79%) were of Grade III while 17(21%) were of grade II; while in Aahar & Anuvanshikta in combination as hetu, 50(63%) were of Grade III while 30(37%) were of grade II.

- **Discussion on Stagewise Distribution of patients in the three groups of Hetus viz. Aahar, Anuvanshikta, Aahar & Anuvanshikta in combination**

Out of 240 patients 30(13%) patients were of Stage I, 128(53%) patients were of stage II, 58(24%) patients were of stage III, 24(10%) patients were of Stage IV.

- **Discussion on Histopathology Reportwise Distribution of patients in the three groups of Hetus viz. Aahar, Anuvanshikta, Aahar & Anuvanshikta in combination**

Out of 240 patients 3(1%) patients were of Ductal carcinoma in situ(DCIS), 1 patient (1%) of Lobular carcinoma in situ(LCIS), 221(92%) patients were of Infiltrating Duct carcinoma(IDC) while 15 (6%) patients were of Infiltrating Lobular carcinoma(ILC).

- **Discussion on cross tabulation of the Age group, Causative factors and Grade**

When cross tabulation between the three groups viz. Aahar Hetu, Anuvanshikta Hetu and Aahar + Anuvanshikta Hetu (in combination) was done it was observed that

- Anuvanshikta hetu is a prominent causative factor for Grade 3 across all age groups.

-
- Age Group 41 to 60 is more exposed to disease.
 - Aahar and Anuvanshikta stand to be independent potential risk factors for the causation of the disease.
 - **Discussion about Anuvanshikta as a prominent causative factor for Grade3 across all age groups.**

When comparison of 3 groups i.e Individual Aahar Hetu, individual Anuvanshikta Hetu and combination of Aahar + Anuvanshikta Hetu as causative factors in Dushta Stanarbud (Breast Cancer) was done to find out the dominance of risk factor with respect to age it was observed that Anuvanshikta is a dominant risk factor across all age groups.

Acharya Sushruta states collective factors necessary for conception. They are Rutu that is the proper menstrual cycle , Kshetra denotes abode . It refers to Uterus of the female. Ambu denotes the digested aahar rasa which provides nutrition to the foetus . Just as water is necessary for life aahar rasa is necessary for proper growth of the foetus. Beeja is combined reference of Artava and Shukra. Acharya Sushrut has taken into consideration the anatomy and physiological aspects important for a healthy progeny.²¹⁸.

The combination of Panchmahabhuta and Atma is the basis of human being. The combination of these mahabhutas constitute the formation of three doshas viz. Vata-Pitta-Kapha. Combination of Prithivi mahabhuta and Jala mahabhuta constitutes Kapha, Agni mahabhuta constitutes Pitta and Aakash mahabhuta + Vayu mahabhuta constitute Vata. These tridoshas are responsible for the formation, sustenance and destruction of the body. Thus they are an integral part of conception .The dominance of these doshas is responsible for the characteristic features of the person. This dominance is of two types- Prakrut & Vikrut. The dominance specified is in due natural course which imparts individual characteristics to the foetus is termed as prakruti²⁷⁵. It is determined at the time of conception . It is based on the Shukra-Shonita prakruti i.e quality of Shukra of the male and Aartav of the female, kala(time)-Garbhashaya prakruti i.e the age factor of the female –The health of uterus of

Teenager, Young, Matured female, prakruti of the diet and routine followed by the mother and dominance of the mahabhutas. The sum total of the dominance of the doshas with respect to above mentioned factors determines the basic characteristic prakruti of the foetus. It is of seven types. The prakruti formed after this is dosha prakruti. Vikruti denotes imbalance of the doshas. The natural dominance is prakruti while aggravation is vikruti²⁷⁴. When there is disequilibrium in these doshas it creates vyadhis (diseases).

Acharya Charak states that the normal factors which are responsible for creation of human being are also responsible for creating disease when they become abnormal²⁹³. The factors responsible for conception and healthy foetus are ideal shukra, ideal artava, normal uterus, atma along with mana and rasa formed from habitual diet taken by the mother. In short the foetus is formed due to six factors viz. Matruj, Pitruj, Atmaja, Satmyaja, Rasaja and Mana (mind). Of these, four factors Matruja, Pitruj, Atmaja and Mana are cause for conception. Rasaja and Satmyaja can be described as environmental factors. The soft organs are formed due to Matruj bhava while solid elements are formed due to Pitruj bhava. The beeja i.e. ideal shukra and ideal artava are responsible for a healthy progeny. If they are totally vitiated by doshas they are unable to unite and form a foetus. Sometimes there is partial vitiation. Any deformity in the Garbhotpadaka Beeja (ovum) or even in a part of the beeja it is carried onto the foetus i.e. the fraction of the beeja affected creates deformity in the part which is formed by it. If there is no deformity in the beeja or beejabhaga the foetus thus formed is normal²⁹³. This deformity due to beeja dosha by birth shows its importance. Further vitiation of these doshas leads to pathogenesis of disease. Grade 3 in which the normal cell and tissue pattern is distorted considerably, denotes high penetration of the doshas causing poor differentiation of the cells. Tumor grade is the description of a tumor based on how abnormal the tumor cells and the tumor tissue look under a microscope. It is an indicator of how quickly a tumor is likely to grow and spread. If the cells of the tumor and the organization of the tumor's tissue are close to those of normal cells and tissue, the tumor is called "well-differentiated." These tumors tend to grow and spread at a slower rate than tumors that are "undifferentiated" or "poorly

differentiated,” which have abnormal-looking cells and may lack normal tissue structures. In Grade 1 tumors, the tumor cells and the organization of the tumor tissue appear close to normal. These tumors tend to grow and spread slowly. In contrast, the cells and tissue of Grade 3 tumors do not look like normal cells and tissue. Grade 3 tumors tend to grow rapidly and spread faster than tumors with a lower grade²⁹⁵.

As described the dosha vikruti in Anuvanshikta is by birth. Further vitiation of doshas may be influenced due to external factors adding to the high gradation of the disease as the dosha bala samprapti of disease causation is strong. Thus it is a prominent factor in causation of severity of disease.

Importance of anuvanshikta can also be understood according to the classification of diseases. Vyadhis(diseases) have been described of three types according to Sushrutacharya.²¹³ Aadhyatmika, Adhibhautika& Adhidaivika which have been further catagorised in seven types. Of these seven types Aadibalapravritta, Janmabalapravritta, Doshabalpravritta are included in Aadhyatmika vyadhis. Aadibala pravritta vyadhis are caused due to maternal or paternal factors. This catagorisation shows dominance of maternal and paternal factors in causation of disease. Thus genetics play an important role in causation of disease.

Research conducted at NHGRI states that while genetic susceptibility may account for only up to roughly a third of all breast cancers, every breast cancer is caused by genetic changes. These changes occur in the tumor cells themselves, and each tumor cell accumulates these genetic changes as the disease progresses. To a large extent, cancers are caused by a loss of function of tumor suppressor genes - genes that, when active, are able to suppress the formation of tumors. In hereditary cancers, according to this so-called "two-hit" theory, there is existence of a mutated copy of a gene on one chromosome, inherited from either mother or father. And then, because of some "hit," or environmental event, there is a loss of other copy of the gene on the other chromosome. This event spurs the initiation of cancer, since there is no good copy of the gene left to balance out the inherited bad one. This also explains why some people are so susceptible to certain types of cancer because they need

only one hit on one chromosome, whereas a "normal" person would need two hits on the same region of both chromosomes²⁹⁶. This supports the theory of Dosha vikruti, genetical alterations due to beeja dosha and its susceptibility to initiation of carcinogenesis.

In a study conducted to compare the histological features of breast cancer in women carrying mutations in the susceptibility genes BRCA1 and BRCA2 with controls unselected for family history it was seen that cancers in carriers of BRCA1 and BRCA2 mutations were, on average, of a higher overall grade than in controls²⁹⁹.

- **About age group and incidence of Breast Cancer**

Among the 240 patients of Breast cancer 55 patients(22.91%) were in the age group 21 – 40 yrs, 144 patients(60%) were in the age group 41 -60 yrs while 41 patients (17.08%) were in above 60 yrs. Overall age group 41 to 60 was more exposed to the disease out of which 51 patients(63.75%) patients were from Aahar group, 41 patients(51.25%) were from Anuvanshikta group while 52 patients(65%) were from Aahar & Anuvanshikta in combination.

Age group 41 to 60 years which represents the peri menopausal, menopausal and post -menopausal women constituted maximum number of patients. Stanya and Aartav are upadhatus of Rasa dhatu¹⁹⁵. The normal cycle of menstruation starts at the age of 12 years and continues till 50 years of age. It helps to purify the body, also the stana (site of Stanya). According to Acharya Sushrut regular menstrual cycle purifies the body in females. Thus they are less prone to diseases²⁹⁸.

In the above mentioned age group body undergoes changes in the hormones, irregularity in menstrual cycle and cessation of menses thus adding to the risk of Breast cancer.

Age incidence rates in India suggest that the disease peaks at a younger age (eg, 40-50 years) than in Western countries and as a result, the majority of new diagnoses occur in pre-menopausal women³¹³.

- **Discussion regarding Aahar and Anuvanshikta as individual Hetus**²⁹⁹

The relationship between causation & disease has been described thus – there can one cause for many diseases while a sole cause for one disease. There can be one reason for one disease and various different reasons for different diseases. Thus Aahar and Anuvanshikta are individual potential risk factors of the same disease i.e Dushtastanarbud (Breast Cancer).

Oncogenic pathways leading from early events to invasive, metastasising cancers are different for sporadic versus hereditary breast cancer. In hereditary cancers tumorigenesis most often starts from the inactivation of two alleles of a tumour suppressor gene, while in sporadic cancer more often genomic amplification of only one allele of an oncogene would be an early event. Both in hereditary cancer as well as in sporadic cancer, early events can take place in a variety of specific genes, leading through different pathways, probably to different tumour types, which have a different clinical outcome³⁰⁰.

Study conducted regarding lifestyle risk factors by family history for gastric, Breast, Lung and colorectal cancer revealed that the magnitude of lifestyle factors obtained for cancer family history positive were similar to those of cancer family history negative patients. There was no significant interaction between cancer family history and any particular lifestyle factor. Results suggested no appreciable influence of cancer family history on lifestyle related risk factors³¹³.

The histology of breast cancers in predisposed women differs from that in sporadic cases, and there are differences between breast cancers in carriers of BRCA1 and BRCA2 mutations. The findings suggest that breast cancer due to BRCA1, has a different natural history to BRCA2 or apparently sporadic disease³¹².

- **Discussion on Aahar as Causative Factor in Dushta Stanarbud**

The variables in the clusters which strongly favoured causation in Dushta Stanarbud were - Amla rasa, Lavan rasa, Katu rasa, Ushna veerya, Atibhojana, Viruddhashana, Paryushitanna . Bakery products were found strongly favouring

in cluster of Aahar group while it showed moderate association in Aahar + Anuvanshikta group.

Amongst the respective 80 patients of two groups, Aahar and Aahar & Anuvanshikta in combination following results were seen.

Attribute	Aahar (out of 80 patients)	%	Aahar & Anuvanshikta in combination (out of 80 patients)	%
Amla	61	76%	73	91%
Katu	62	78%	70	88%
Lavan	61	76%	62	78%
Ushna	56	70%	57	71%
AtiBhojana	51	64%	46	58%
Viruddhashana	53	66%	56	70%
Paryushitanna	44	55%	52	65%
Bakery	44	55%	39	49%

Amla rasa

If taken in excess, amla rasa aggravates pitta dosha due to its similar properties, It liquefies kapha dosha, vitiates rakta dhatu ,causes irritation in mansa dhatu ,causes shotha in weak persons. Due to its ushna guna (heat) it causes oedema, suppuration in mansa dhatu , in wounds and fractures etc⁹³. Ushna guna has penetrating action. It causes the wound to burst open. Ati-yoga of amla rasa i.e excessive use of amla rasa causes acceleration in the body metabolism. It is described to hasten the ageing process at cellular level.³⁰¹ In invasive breast cancer the malignant cells break through the wall of the milk duct and begin to invade the tissues of the breast. Over time, invasive ductal carcinoma can spread to the lymph nodes and possibly to other areas of the body.

Amla rasa reduces the pH in the cells (the normal pH of arterial blood is 7.41, a person is considered to have acidosis when the pH of blood falls below this value and to have alkalosis when the pH rises above 7.41). Acidic environment is

favourable for growth of micro-organisms. Breast carcinoma cells have a higher capacity for acidifying their extracellular milieu than normal mammary cells³⁰².

Research regarding increase in pH of tumor has shown inhibition of cancer metastases. Oral bicarbonate therapy significantly reduced the incidence of metastases in experimental models of breast and prostate cancer and that the effect seems to be primarily on distal (i.e., colonization), rather than proximal (i.e., intravasation), processes. It is not known whether bicarbonate is exerting its effects by decreasing survival of circulating tumor cells (although the numbers are not affected) or by inhibiting colonization at the metastatic site. Increases in pH significantly reduced the release of a lysosomal protease, cathepsin B³⁰³.

Katu Rasa

Due to its similar properties in all aspects, katu rasa causes aggravation of Pitta dosha. It causes dhatu kshaya due to increased metabolism (Pachan / digestion is a property of pitta dosha) further dhatu paka. Decrease in the dhatus reduces strength of the body, causes vata prakop. It reduces Kapha due to its ushna guna thus causing shosha (dryness) and daha. Thus it causes irritation in the tissues. Regular and excess use of katu rasa causing vitiation of its dependent dhatus- rasa-rakta-lasika. Stanya being the upadhatu of rasa is also vitiated, causing its effect on Stana, since nourishment of stana is the function of stanya. Rasa is also mentioned as one of the sites of rasa dhatu. Aggravation of pitta dosha causes vitiation of rasa dhatu and deeper penetration of doshas. Thus katu rasa is responsible in causation and progression of the Stanarbud.

Lavan Rasa

Lavan rasa increases pitta dosha, rakta dosha, causes suppuration in mansa dhatu resulting in death of the tissues. It causes suppuration or increases secretions causing oedema and looseness of tissues due to increased drava dhatu. It increases toxins in the body, causes mukhapaka (stomatitis) Raktapitta, amlodgar (sour belching), its action on skin causes urticarial boils or skin disorders. Reduces bala (strength)⁹⁶. According to sushrutacharya Stana roga is caused due to aggravating of tridoshas and vitiation of rakta and mansa dhatu. Lavan rasa is extremely ushna amongst all the six

rasas. Thus it increases metabolism and causes paka in rakta and mansa dhatu causing invasion in the breast tissue.

All the above three mentioned rasas comparatively possess ushna verya. Of the three rasas, Lavan is extremely ushna followed by Amla rasa. Katu is the milder of the three³⁰⁴. Ushna guna has the property of 'pachan' i.e it causes fast metabolism of dhatus thus causing quick invasion and deep penetration¹⁰³. All these rasas singularly or in combination aggravate pitta dosha vitiate rakta dhatu due to ushna guna and vitiates mansa dhatu causing dhatupaak avastha in dushta stanarbud. Due to presence of agni mahabhuta which is teekshna and ushna these variables cause a deeper action in viciation of the dhatus causing infiltration and spread of the disease.

Atibhojana (Overeating)

Atibhojana causes agni vaishamyā (disturbance in digestion)⁷⁵. Food eaten in excess causes Alasya (lethargy), Gaurav (feeling of heaviness), Aatopa and Agnimandya (lack of appetite)¹⁶³.

Food taken in excess quantity causes aggravation of all the doshas¹⁶¹. Due to overeating these doshas reside in a part of stomach and vitiate the food ingested. These aggravated doshas and vitiating of aahar causes symptoms according to the aggravation of doshas¹⁶².

Agnimandya is one of the symptoms caused due to vitiating of rasavaha srotasa. It creates aamotpatti which leads to vitiating of the doshas and improper formation of adya rasa dhatu. Stanya, one of the upadhatus of rasa gets vitiating thus causing disease to stana (breast) ashaya of stanya. The agnivaishamyā (disturbed functioning of gastric fire) due to Atibhojana further causes dhatu- agnimandya leads to improper formation of later dhatus. Vitiating of Rasa, Rakta, Mansa dhatu causes srotas dushti of the respective dhatu. This vitiating is mentioned as a cause in Stana roga. Arbud is mentioned as a symptom of mansavaha srotas dushti. Thus ati bhojana leads to the occurrence of the disease.

Ati bhojan is also one of the causes of ati sthaulya³⁰⁵. Sthaulya signifies excessive increase in meda dhatu.

According to modern medicine obesity is one of the risk factors for Breast cancer. Obesity is a condition in which a person has an abnormally high and unhealthy proportion of body fat. Various research studies have reported adverse impact on the prognosis of breast cancer³⁰⁸. Various possible mechanisms by which obesity causes poor prognosis of breast cancer such as estrogenic activity, advanced or more aggressive disease at diagnosis and high likelihood of both local and systemic treatment failure have been studied³⁰⁷.

Viruddhanna

Viruddhashana means have combination of food which is incompatible and causes imbalance of doshas but does not eliminate them from the body. It causes disease or disorders by vitiating dhatus rasa- rakta etc.

A person who indulges in eating without considering his health, who eats food which is incompatible in rasa or veerya contracts disease, diminished functioning of the indriyas and can succumb to death¹⁹². Viruddhashana can cause Jwara, Peenasa, Aadhmaan, Grahani, Amlapitta, Udara, Visarpa, Visphota, Bhagandar, Shotha, Napunsakatva, Aandhya, Unmaada, Murccha, Mada, or Death¹⁹⁴. Virddhashana causes vitiation of the dhatus. By causing aggrevation of doshas and vitiation of dhatus, viruddhashana causes dysfunctioning of the agni. This leads to dhatu-agnimandya. The gradual dysfunctioning of the dhatus leads to improper functioning of the srotasas. Stanya, upadhatu of rasa dhatu gets vitiated due to disturbance in rasa – raktavaha srotasa. Rasa-Rakta- Mansa the causative factors in stana roga get vitiated causing stanarbud.

Paryushitanna

In Rasayana adhyaya, Chikitsa sthana of Charak Samhita, causes of aggrevation of doshas have been mentioned. Amongst the aahar factors viruddhashana, Adhyashana, paryushitanna have been mentioned as unhealthy³¹⁰. Paryushitanna reduces the gastric fire causing aamotpatti. Rasa, the aadya dhatu thus formed is devoid of quality which leads to improper formation of the later dhatus. Stanya the upadhatu of rasa is thus vitiated. This causes affection of the organ stana which is ashraysthana of stanya.

Paryushittana (stale food reheated food) causes aggravation of doshas creating disturbances in dhatus. Rakta dhatu dushti, mansa shaithilya(flaccidity), Meda vishyandana etc. are the symptoms seen. The immunity is reduced. The vitiation of Rakta and Mansa dhatu is the causative factor in stana roga. Vidradhi formation is a symptom caused due to vitiation of Raktavaha srotasa. Arbud formation is a symptom mentioned due to vitiation of Mansavaha srotasa²³⁵. Thus, paryushitanna can lead to causation of Arbud.

As per modern Dietetics, process of reheating and holding of plant foods causes a loss of nutrients. During ice storage and thawing of animal foods, fish undergoes bacterial breakdown, dehydration and oxidation. This results in a loss of nutritive value.

Bakery products

The ingredients in bakery products are wheat /refined flour, fats (vanaspati ghee, oil etc), sugar and leavening agent yeast, baking soda etc. sometimes salt is added in small proportions. In this food preparation there is action between sugar and leavening agent causing release of carbon-di-oxide which gives a fluffy texture to the product. In this process of disintegration of sugar, the chemical reaction becomes acidic.(1).

Amla rasa if taken in excess aggravates pitta dosha due to its similar properties, It liquefies kapha dosh, avitiates rakta dhatu, causes irritation in mansa dhatu, causes shotha in weak persons. Due to its ushna guna (heat) it causes oedema, suppuration in mansa dhatu, in wounds and fractures etc. ⁹⁶ Ushna guna has penetrating action. It causes the wound to burst open. Ati-yoga of amla rasa i.e excessive use of amla rasa causes acceleration in the body metabolism. It is described to hasten the ageing process³⁰³. In invasive breast cancer the malignant cells break through the wall of the milk duct and begin to invade the tissues of the breast. Over time, invasive ductal carcinoma can spread to the lymph nodes and possibly to other areas of the body.

Amla rasa reduces the pH in the cells. Acidic environment is favourable for growth of micro-organisms. Breast carcinoma cells have a higher capacity for acidifying their extracellular milieu than normal mammary cells³⁰⁹.

Research regarding increase in pH of tumor has shown inhibition of cancer metastases.

Oral bicarbonate therapy significantly reduced the incidence of metastases in experimental models of breast and prostate cancer and that the effect seems to be primarily on distal (i.e., colonization), rather than proximal (i.e., intravasation), processes. It is not known whether bicarbonate is exerting its effects by decreasing survival of circulating tumor cells (although the numbers are not affected) or by inhibiting colonization at the metastatic site. Increases in pH significantly reduced the release of a lysosomal protease, cathepsin B³¹⁰.

Discussion on role of Aahar, Anuvanshikta and Aahar + Anuvanshikta in combination as hetus with respect to progression of disease (Metastasis)

Metastasis according to Ayurved :

In Ayurved metastasis can be termed as 'Upadrava' of primary disease.³¹³

Upadrava has been defined as disease formed due to aggrevation of the doshas which have caused the initial vyadhi(disease).

For understanding the phenomenon of Metastasis we first need to understand ayurvedic concept of metabolism .

Various types of food vis. Aashita, peeta, leedha, Khadita is eaten by a person. This food is digested by the panchbhautika agni with the help of Jatharagni (gastric fire). Like Kala (time) this aahar keeps on flowing through all the dhatus simultaneously gets digested by the ushma(heat)& vayu . The food thus digested and converted by the jatharagni and dhatvagni bestows Bala(strength), Shariropachaya (growth of the body) , Sukha(happiness) and life.Thus for the normal functioning and growth of the body Sharir dhatus use aahar ingested, convert it in the form beneficial for the respective dhatus and maintain samyavastha. (balance)³¹⁴ .

When the aahar is digested and assimilated properly, the clear or cream part is called Rasa. This rasa is circulated in the whole body through vyan vayu.

The unwanted part is called Kitta(waste part). In this way aahar parinama (digestion of food) can be divided in two parts –

-
- Prasad bhaga –Aahar Rasa. It is circulated through the whole body thro' vyan vayu.¹⁹⁶ Aahar rasa nourishes dhatus- Rasa, Rakta, Mansa, Meda, Asthi, Majja, Shukra and Ooja.
 - It also noiurishes the Panch Dnyanendriyas (five special senses),Sharir sandhi(joints), Snayu and Kandara(Muscles and tendons), Kalas(tissues) and avayava(organs). All these dhatus accept the specific measure needed for its effective functioning according to the age and need of an individual. Thus they maintain equilibrium in the body.
 - Mala Bhag – Kitta. Mutra (urine), Purish(faeces). Sweda(sweat),Vata, Pitta, Kapha, Khamala (secretions of ear, Nose, Mouth, eyes), secretions of the genitals, nakha(nails), Kesha(hair) are nourished by this Kitta.

Dhatus which cause harm to the body are called as malabhuta. e.g khamala (secretions of eyes, nose, ears etc.), pakva dhatus causing suppuration. Aggrevated Vata-Pitta – Kapha and any other elements which can cause harm to the body if not eliminated are called as mala.

Any circumstances which create disequilibrium in the dhatus is levelled with the help of Aahar(food) and dietary changes. The same applies for Kitta. The disequilibrium of malas are balanced with viparita gunas(opposite gunas).This chikitsa in turn help to maintain the balance of the dhatus.

These dhatus operate through their specific srotasas(channels).Through these srotasas the dhatus gets partially nourished. Due to four types of aahar vis. Aashita, peeta, leedha, Khadita the sharir(body)is created and maintained. Diseases are also caused due to improper habits of these Aashita, peeta, leedha, Khadita aahar.The growth or destruction of the body is especially dependent on the beneficial or harmful food habits³¹⁵.

Body metabolism is dependent on the proper functioning of Dosha- Dhatu and Mala. Due to any reason when this cycle is disturbed body tries to regain its normalcy. This balance is attained according to natural tendency³¹⁶. Acharya Chakrapani has explained 'Svabhavoparamvada' a theory explaining destruction due to natural phenomenon. He propagates that everything in the universe is unstable or momentary. Everything moves in a cyclic pattern. Sharir (body) is nourished by aahar

rasa. According to the concept वृद्धिः समानैः सर्वेषां विपरीतैर्विपर्ययः। the dhatus which bear similarity to the properties of aahar dravyas increase and those which are dissimilar decrease. The cause for increase is necessary but the reduction or decrease happens as a natural process. The natural discord between this phenomenon is the cause of disequilibrium in the natural process leading to diseases.

Factors responsible for causation and progression of Metastasis:

Though Ahitakara Aahar (food which can harm the body) is one of the causative factors in disease process , it does not show its effects immediately since not all types of Ahitakara aahar(Harmful diet) are responsible for aggravating all the doshas , all the doshas are not of the same potency and the vyadhikshamatva(immunity) differs from person to person³¹⁷.. The causation and progression of disease ,its status as mrodu(mild), Daruna(severe), Kshiprasamutthana(acute) or Chirakarina (Chronic)is also dependent on the following factors –

- a. With respect to Aahar
Desha(Place), Kala(Time), Samyoga (combination of fooditems), Veerys(potency), Pramana(Quantity) and Atiyoga(overindulgence) .
- b. With respect to Doshas
Evaluation of the causes (single or multiple) for dosha prakop ,treatment of Dosha which is being treated , penetration of the doshas, chronicity of the doshas , Its affection to the Pranayatana(vital organs), erosion or affection to the marma sthana(vital points) in the body.
- c. With respect to Physical constitution
Ati sthula(obese), Atikrusha(emaciated), One whose body frame is not well defined(flaccid muscles, weak bones), Feeble /emaciated person , One who is nurtured with ahitakar aahar, One who does not eat to his capacity .
- d. According to Psychological Constitution
Weak minded/ timid.
Hence the progression of the disease is also individualistic.

How does Metastasis occur?

As mentioned earlier aahar rasa gets circulated in the whole body due to vyan vayu. While circulating this rasa it gets accumulated at the site or srotasa where there is kha – vaigunya (lacunae) causing vikruti (pathological process). In this way the doshas circulating through rasa get stagnated and aggravated at the specific srotasa causing disease^{196, 318}.

Another cause for disease process is aamotpatti. Due to the weakness of agni (gastric fire) the process of digestion is compromised. The metabolism of dhatus is affected. The consecutive dhatus become weak due to undigested adya rasa. This undigested initial dhatu is termed as 'Aama'. These undigested /immature dosha – dhatu-mala is called 'saama'. Thus due to agnimandya (weakness of the gastric fire) there is imbalance in the metabolism leading to disease.

If this disequilibrium persists it leads to vitiation and further destruction of dhatus. This can lead to occurrence of another disease as a complication of initial disease which is termed as 'Upadrava'. The characteristic feature is it does not contradict the treatment of initial disease³²¹.

Metastasis according to Modern Medicine

Definition of Metastasis

Meta means “after,” “along with,” “beyond,” “among,” “behind,” and productive in English.

sta·sis - Greek *stásis* state of standing, equivalent to *sta-* (stem of *histánai* to make stand; see stand). Stasis is the state of equilibrium or inactivity caused by opposing equal forces. Pathologically it can be defined as stagnation in the flow of any of the fluids of the body, as of the blood in an inflamed area or the intestinal contents proximal to an obstruction.

Thus, Metastasis formation is the spread of cancer cells from a primary tumor to vital organs and distant sites in the cancer patient's body. This process is the end result of a complex series of genetic alterations, epigenetic events, and host responses.

Cancer progression is a multistep process driven by a series of accumulating genetic or epigenetic changes.

Characteristics of Cancer progression

1. Uncontrolled growth.
2. Suppression of death (apoptosis) or senescence
3. Persistent activation of growth stimulatory signal transduction pathways due to genetic oncogenic changes
4. Alteration of critical nodes in the cell cycle – and/or
5. Downstream deregulation at the level of DNA transcription factors.

This metastasis occurs through Lymph circulation or Blood circulation.

- **Discussion on Aahara and Anuvanshikata as individual hetus of Dushta Stanarbuda with respect to Lymph node metastasis-**

In the present study it was observed that Aahar Hetu and Anuvanshikta Hetu as individual factors were involved in the progression of Dushta stanarbud with respect to Lymph node metastasis(i.e upto StageIII) .

Due to the proximity of rasavaha srotasa and its vulnerability to the doshas , progression of dushta stanarbud is seen³²⁰.

This denotes the intricate network of rasavaha srotasa. This shloka which explains the pathogenesis of jwara to dhatugata avastha i.e penetration of doshas causing gradual vitiation of dhatus. This can also explain the progression of Dushta stanarbud with respect to lymph node metastasis. Stanya is one of the updhatus of Rasa. Vitiation or the rasa dhatu through rasavaha srotasa causes its effects on stana the abode of stanya. This vitiation can be triggered due to individual hetus.

- **Discussion on Aahara and Anuvanshikata in combination as hetu of Dushta Stanarbuda with respect to Distal Metastasis-**

In the present study it was observed that the combination of Anuvanshikta along with Aahar was involved in the progression of Dushta Stanarbud with respect to distal metastasis.

As discussed earlier, Anuvanshikta or genetics is seen to be potential risk factor for Breast cancer. According to Ayurved Vata, Pitta , Kapha doshas are the three main pillars of the body. They are responsible for Utpatti(formation), Sthiti(maintenance) and Laya (degeneration) . The dominance of these three doshas

decide the prakruti (normalcy) and vikruti (abnormality). Normal functioning of the body is dependent on these tridoshas. These three doshas are dependent on Aahar for their proper functioning. Aahar has been mentioned as upastambha or subordinate pillars. Having aahar in moderation which is Desha, Kala and sharir gunaviparita, avoiding extreme food habits, not withholding the vegas (natural urges), avoiding too strenuous activities bestows swasthya (good health).

As opposed to this overindulgence in unhealthy dietary habits leads to various diseases. Such Apathya (any action which is detrimental for the health) doesn't show its effects immediately as the combination of dosha dushya can hamper the disease promoting action. But in favourable condition it can cause progression.

Sometimes Just as a seed sown in the soil takes its own time to fertilize even when it is watered, in the same way doshas also take their time to manifest their symptoms³²¹. The doshas according to their strength and affinity vitiate the dhatus³²³.

Sometimes the doshas take time to travel slowly and in less amount, through the macro and micro channels of dhatus -rakta etc. They are not eliminated even by medication³²².

Considering this proximity or interrelation of Aahar with the doshas it can be stated that though Anuvanshikta holds dominance in causation of the disease aahar as subordinate factor can cause progression of the disease.

Hence, an individual with anuvanshikta as predisposing factors needs to be vigilant in her dietary regime.

Cancer is a genetic disease in its origins. Progression from normal tissue to invasive cancer is thought to take place over 5 to 20 years and is influenced by hereditary genetic factors as well as somatic genetic changes.⁽¹¹⁾

CONCLUSION

From this study and through the observations and discussion it can be concluded that–

- ✓ Aahar hetus specially Amla, Katu, Lavan rasa, Ushna veerya, Ati bhojan, Paryushitanna, Viruddhanna, Bakery products lead to causation of Dushta Stanarbud (Breast Cancer).
- ✓ Ahara hetus as mentioned above, if not discontinued, lead to progression of malignancy in Lymph nodes.
- ✓ Anuvanshikta of Cancer is a dominant causative factor in causing Dushta stanarbud across all ages.
- ✓ Anuvanshikta of Cancer as an individual hetu poses as a major risk factor in causation of Dushta Stanarbud (Breast Cancer).
- ✓ High grade penetration of malignant cells (Grade III) is likely in patients having Anuvanshikata of Cancer.
- ✓ Anuvanshikta of Cancer as an individual hetu grossly leads to progression in Lymph nodes.
- ✓ Anuvanshikta of Cancer along with Aahar hetu grossly leads to progression of the dushta stanarbud (Breast Cancer) in distal organs i.e Distal metastasis.

SCOPE FOR FURTHER STUDY

- Study of each ashana prakara (Atyashana, Adhyashana, Vishamashana, Paryushitanna) and its effect in causation of Cancer.
- Role of specific Srotodushti hetu in Progression of Cancer (Distal Mets) .
- Role of Aahar hetu & Anuvanshikta as causative factors in Dushta Stanarbud (Breast Cancer) with respect to Heredity of same site(Breast) or genital organs (Ovary, Uterus etc).

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6. गात्रप्रदशे क्वचिदेव दोषाः संमूर्च्छिता मांसमभिप्रदूष्य। वृत्तं स्थिरं मन्दरुजं सुश्रुत निदानस्थान महान्तमनल्पमूलं चिरवृध्यपाकम्। कुर्वन्ति मांसोपचयं तु शोफं तदर्बुदं अ.११ शास्त्रविदो वदन्ति।
7. पञ्चभूतात्मके देहे आहारोऽपि पाञ्चभौतिकः ,सम्यक् विपक्वोभूत्वा स्वान् सु.सू.४६/५२५

- गुणानभिवर्धयति । स च पुनः षड्रसात्मकः -
मधुराम्ललवणकटूतिक्तकषायभेदेन गुणतःपुनर्गरुलघुभेदेनद्विधा ।
8. स्तनौ कुचौ । चुचुकम् कुचाग्रं इति स्तनाग्रस्य । अमरकोष द्वितीय काण्ड
उरः वत्सम् वक्षः इति । १२२७, १२२८, १२२९
9. स्तनोरसिजवक्षोज पयोधर कुचस्तथा । राज.नि.मनुष्यादि
स्तनाग्रं चूचुकं वृत्तं शिखा स्तनमुखञ्च तत् ।। वर्ग६०, ६१
10. षट्पत्रचाशत्प्रत्यांगेषु एकम् । द्वौ स्तनौ ।। च.शा.७/११
11. स्तनसम्पद् - नात्यूध्वौ नातिलम्बावनतिकृशावनतिपीनौ युक्तपिप्पलकौ च.शा.८/५३
सुखप्रपानौ स्तनौ ।।
12. चतुर्थमङ्गं वक्षस्तु तदुपाङ्गान्यथ ब्रूवे । स्तनौ पुंसस्तथा नार्याविशेष भा.प्र. पूर्व खण्डगर्भ
उभयोरयम् ।। प्रकरणम् ३ - ७३
13. स्तनौ पुंसस्तथा नार्याविशेष उभयोरयम् ।। भा.प्र. पूर्व खण्ड गर्भ
यौवनागमे नार्याः पीवरौ भवतः स्तनौ । गर्भावत्याः प्रसूतायास्तावेव प्रकरणम् ३-७३, ७४
क्षीरपूरितौ ।।
14. स्त्रोतासि नासिके कणौ नेत्रे पाय्वास्यमेहनम् । स्तनौ रक्तपथश्चेति अष्टांगहृदय शा.३/४०
नारीणामधिकं त्रयम् ।।
15. श्रवणनयनवदनघ्राणगुदमेद्राणि नव स्त्रोतांसि नराणां बर्हिमुखानि एतान्येव सु.शा.५/१०
स्त्रीणामपराणि च त्रीणि द्वे स्तनयोरधस्ताद्रक्तवहं च ।।
16. शुक्रवहे द्वे तयोर्मूलं स्तनौवृषणौ च , तत्र विध्वस्य क्लीबता चिरात् प्रसेको सु.शा.९/१२
रक्तशुक्रता च ।।
17. स्न्यवहे द्वे - द्वे स्तनयोः स्तन्यं वहतः । सु.शा.९/५
18. स्त्रियां तु विंशतिरधिका । दश तासां स्तनयोरेकैकस्मिन् पश्च पश्चेति यौवने सु.शा. ५/५०
तासां परिवृद्धिः ।

19. स्तनयोरधस्ताद् द्वयगुलमुभयतः स्तनमूले तत्र कफपूर्णकोष्ठतया सु.शा.६/२६
(कासश्वासाभ्यां) म्रियते ।
स्तनचूचुकरुर्ध्वं द्वयगुलमुभयतः स्तनरोहितौ , तत्र लोहितपूर्णकोष्ठतया
कासश्वासाभ्यां च म्रियते ।
उभयत्रोरसो नाड्यौ वातवहे अपस्तम्भौ नाम, तत्रवातपूर्णकोष्ठतया
कासश्वासाभ्यां च मरणम् ।।
20. तासां तु खलु नाभिप्रवणानां धमनीनामूर्ध्वगा दश, दश चाधोगामिन्यः सु.शा.९/४
चतस्त्रस्तिर्यगाः ।
21. चत्वारिंशद्वक्षसि, तासां चतुर्दशाशस्त्रकृत्याः द्वे द्वे स्तनमूले सु.शा.७/२४
स्तनरोहितापलापस्तम्भेषुभयताऽष्टौ ।
22. यावत्यो गतयो यैश्च कारणैः संभवन्ति हि । तावन्तः स्तनरोगाः स्युः स्त्रीणां सु.नि.१०/१५ – १७
तरेव हेतुभिः ।।धमन्यः संवृत्तद्वारा कन्यानां स्तनसंश्रिताः ।
दोषाविसरणात्तासां न भवन्ति स्तनामया : ।
तासामेव प्रजातानां गर्भिणीनां च ताः पुनः । स्वभावादेव विवृत्ता जायन्ते
संभवन्त्यतः ।।
23. सक्षीरौ वाऽप्यदुग्धौ वा प्राप्य दोषः स्तनौ स्त्रियाः । सु.नि.१०/२६
रक्तं मांसं च संदूष्य स्तनरोगाय कल्पते ।
24. रसात् स्तन्यं ततो रक्तमसृजःकण्डरासिरा । च.चि.१५/१७
25. रसप्रसादो मधुरः पक्वाहारनिमित्तजः। कृत्स्नदेहात् स्तनौ प्राप्तः सु.नि.१०/१८-१९
स्तन्यमित्यभीधियते ।।
विशस्तेष्वपि गात्रेषु यथा शुक्रं न दृश्यते। सर्वदेहाश्रितत्वाच्च
शुक्रलक्षणमुच्यते ।।
26. अदुष्टं चाम्बुनिक्षिप्तमेकी भवति पाण्डुरम् । मधुरं चाविवर्णं च प्रसन्नं तत् मा.नि.स्तन्यदुष्टी
प्रशस्यते ।।। निदानम् ४
27. स्तनयोरपीनत्वजननं जीवनं चेति ।। सु.सू.१५/९
28. अजीर्णासात्म्यविषमविरुद्धात्यर्थभोजनात् । लवणाम्लकटुक्षारप्रक्लिन्नानां च च.चि.३०— २३२ –

सेवनात् । १२३२ ॥

२३६

मनःशरीरसन्तपादस्वप्नान्निशि चिन्तनात् । प्रप्तवेगप्रतीघातादप्राप्तोदीरणेन
च ॥ १२३३ ॥

परमात्रं गुडकृशरां दधि मन्दकम् । अभिष्यन्दीनि मांसानि ग्राम्यानूपौदकानि
च ॥ १२३४ ॥

भुक्त्वाभुक्त्वादिवास्वप्नान्मददृश्यस्यातिनिषेवणात् । अनायासादभीघातात्
क्रोधाच्चातङ्ककर्शनैः ॥ १२३५ ॥

दोषाः क्षीरवहाः प्राप्य सिराः स्तन्यं प्रदूष्य च । कुर्युरष्टविधं भूयो
दोषतस्तन्निबोध मे ॥ १२३६ ॥

29. सहान्नपानेन यदा धात्री वज्रं समश्नुते । पच्यमानेन पाकेन ह्यनन्नत्वान्न काश्यपसंहिता सू. १९
पच्यते ॥ अपच्यमानं विक्लिन्नं वायुना समुदीरितम् । रसेन सह संपृक्तं याति
स्तन्यवहाः सिराः ॥ सर्वस्त्रोतांसि हि स्त्रीणां विवृतानि विशेषतः । तत्
पयोधरमासाद्य क्षिप्रं विकुरुते स्त्रियाः ॥
30. रूपाणि पीतवज्रायाः प्रवक्षाम्यत उत्तरम् । अजिर्णमरतिग्लानिरनिमित्तं काश्यपसंहिता सू. १९
व्यथाऽरुचिः ॥ पर्वभेदोऽङ्गमर्दश्च शिरोरुग् द(क्ष)वथुग्रहः । कफोत्वत्लेदो
ज्वरस्तृष्णा विड्भेदो मूत्रसंग्रहः ॥ स्तम्भः स्त्रावश्च कुचयोः सिराजालेन
संततः । शोथशूलरुजादाहैः स्तनः स्प्रष्टुं न शक्यते ॥
स्तनकीलकमित्याहुर्भिषजस्तं विचक्षणाः । कीलवत् कठिनोऽङ्गेषु बाधमानो
हि तिष्ठति ॥
31. एष पित्तात्मना शीघ्रं पाकं भेदं च गच्छति । कफाच्चिरं क्लेशयति वातादाशु काश्यपसंहिता सू. १९
निवर्तते (विवर्धते) ॥ शाखाशिरोभिस्तु यदि विमार्गान्न प्रपद्यते ।
32. घृतपानं प्रथमतः शस्यते स्तनकीलके । स्त्रोतांसि मार्दवं स्नेहाद्यान्ति वज्रं च काश्यपसंहिता सू. १९
च्याव्यते ॥ निर्दोहो मर्दनं युक्त्या पायनं च गलेन च । (इति ताडपत्रपुस्तके
३३ तमं पत्रम्)
शीताः सेकाः प्रलेपाश्च विरेकः पथ्यभोजनम् ॥
33. अपचितः प्रपतत सुपर्णो वसतेरिव । सूयैः कृणोतु भेषजं चन्द्रमा वोऽपौच्छतु अथर्ववेद षष्ठ काण्ड /

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|-----|---|---|
| ॥ | | नवम अनुवाक सूक्त
८३/१ |
| 34. | पञ्च च यः पञ्चाशच्च संयन्ति मन्या अभि । इतस्तः सर्वा नश्यन्तु वाका अपचितामिव ॥ | अथर्ववेद षष्ठ काण्ड / तृतीय अनुवाक सूक्त
२५/१ |
| 35. | आ सुस्त्रसः सुस्त्रसो असतीभ्यो असत्तरा :। सेहोरंसतरा लवणाद् विक्लेदीयसी ॥ | अथर्ववेद सप्तम काण्ड / सप्तम अनुवाक सूक्त
७६/१ |
| 36. | अर्बुद नपुसक । अर्ब (र्बु) विच् तस्मै उदेति उद् - इण् - ड । | - |
| 37. | कुष्ठविसर्पपिडकामशकनीलिकातिलकालकन्यच्छव्यङ्गेन्द्रलुप्तप्लीह विद्रधिगुल्मवातशोणितार्शोऽर्बुदाङ्गमर्दासृग्दररक्तपित्तप्रभृतयो रक्तदोषजा गुदमुखमेद्रपाकाश्च ॥ | - सु.सू२५/११ |
| 38. | अधिमांसार्बुदार्शोऽधिजिह्वोपकुशगलशुण्डिकाऽलजीमांससङ्घातौष्ठप्रकोपगलगण्डगण्डमालाप्रभृतयो मांसप्रदोषजाः ॥ | सु.सू२५/१२ |
| 39. | ग्रन्थिवृद्धिगलगण्डार्बुदमेदोजौष्ठप्रकारपमधुमेहातिस्थौल्यातिस्वेदप्रभृतयो मेदोदोषजाः ॥ | सु.सू२५/१३ |
| 40. | .. श्रुणु मांसप्रदोषजान्।अधिमांसार्बुदं कीलं गलशालूकशुण्डिके। पूतिमांसालजीगण्डगण्डमालेपजिह्विका ॥ | च.सू.२८/१४ |
| 41. | शाखा रक्तादयस्त्वक् च बाह्यरोगायनं हि तत् । तदाश्रया मषव्यङ्गण्डालज्यर्बुदादयः ।।बहिर्भागाश्च दुर्नामगुल्फशोकादयो गदाः ॥ | अष्टांगहृदय
सू. १२/४४-४५ |
| 42. |महत्तु ग्रन्थितोऽर्बुदम्।ऽ१४॥
प्रायो मेदः कफाढ्यत्वात्थिरत्वाच्च न पच्यते ॥ | अ.हृ.उ.२९/१४-१५ |
| 43. | रोगश्चोत्सेधससामान्यादधिमांसार्बुदादयः । | च.सू.१८/३३ |
| 44. | वातेन पित्तेन कफेन चापि रक्तेन मांसेन च मेदसा च । तज्जायते तस्य च | सु.नि.११/ १४ |

लक्षणानि ग्रन्थे : समानानि सदा भवन्ति ।

45. षड्विधं स्यात्तर्थाबुदम् । वातात्पितात्कफाद्रक्तान्मांसादपि च मेदसः । शारंगधर संहिता खंड
१ / ७ / ६९
46. आयम्यते व्यथत एति तोदं प्रत्यस्यते कृत्यत एति भेदम् । कृष्णोऽमृदू सु.नि.११/ ४-५
बस्तिरिवाततश्च भिन्नः स्त्रवेच्चाविलजोस्त्रमच्छम् ॥
दन्दह्यते धूप्यति चोषवांश्च पापच्यते प्रज्वलतीव चापि ।
रक्तः सपीतोऽप्यथवाऽपि पित्ताद्भिन्नः स्त्रवेदुष्णमतीव चास्त्रम ।
47. दोषः प्रदुष्टो रूधिरं सिरास्तु सम्पीडय संकोच्य गतस्त्वपाकम् । सु.नि.११/१५-१६ ,
सास्त्रावमुन्नह्यति मांसपिण्डं मांसाकुरैराचितमाशुवृद्धिम् । स्त्रवत्यजस्त्रं
रूधिरं प्रदुष्टमसाध्यमेतद्गुधिरात्मकं स्यात् । रक्तक्षयोपद्रवपीडितत्वात्
पाण्डर्भवेत् सोऽर्बुदपीडितस्तु ॥
48. दोषः प्रदुष्टो रूधिरं सिरास्तु सम्पीडय संकोच्य गतस्त्वपाकम् । माधवनिदान द्वितीय खंड
सास्त्रावमुन्नह्यति मांसपिण्डं मांसाकुरैराचितमाशुवृद्धिम् । स्त्रवत्यजस्त्रं ३८/२०- २१
रूधिरं प्रदुष्टमसाध्यमेतद्गुधिरात्मकं स्यात् । रक्तक्षयोपद्रवपीडितत्वात्
पाण्डर्भवेत् सोऽर्बुदपीडितस्तु ॥
49. मुष्टिप्रहारादिभिरर्दितेऽङ्गे; मांसं प्रदुष्टं प्रकरोति शोफम् । अवेदनं मा.निदान द्वितीय खंड
स्निग्धमनन्यवर्णमपाकमश्मोपममप्रचाल्यम् ॥ प्रदुष्ट मांसस्य नरस्य ३८/२२-२३
बाढमेतद्भवेन्मांसपरायणस्य ।
50. शरीरवृद्धिक्षयवृद्धिहानिः स्निग्धो महानल्परूजोऽतिकण्डूः । मेदःकृतो गच्छति सु.नि.११/ ६
चात्र भिन्ने पिण्याकसर्पिः प्रतिमं तु मेदः ॥
51. यज्जायते ऽन्यत् खलु पूर्वजाते ज्ञेयं तदध्यर्बुदमर्बुदज्ञैः । यद् द्वन्द्वजातं युगपत् सु.नि.११/ २१,
क्रमादा द्विरर्बुदं तच्च भवेदसाध्यम् ॥२०॥ मा.निदान द्वितीय खंड
३८/२५
52. तेषामृद्गमांसजे वर्ज्ये चत्वार्यन्यानि साधयेत् ॥ अष्टांगहृदय उत्तरस्थान
२९/ १८
53. ग्रन्थ्यार्बुदानां च यतोऽविशेषः प्रदेहेत्वाकृतिदोषदूष्यैः । ततश्चिकित्सेद्विषग - च.चि.१२/८२,८३,८७

बुद्धानि विधानवद् ग्रन्थिचिकित्सितेन ।।

संशोधिते स्वेदितमश्मकाष्ठैः साङ्गुष्ठदण्डैर्विलयेदपक्वम् । विपाट्य चोद्धृत्य

भिषक् सकोशं शस्त्रेण दग्धवा व्रणवच्चिकित्सेत् ।।

अदग्ध ईषत् परिशेषितश्च प्रयाति भूयोऽपि शनैर्विवृद्धिम् । तस्मादशेषः कुशलैः

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पुनर्बलवर्णोजसां च । प्रकरणम् ३
62. तस्माद्वा एतस्मादात्मान आकाशः संभूतः। तै.उ.ब्रह्मानन्द वल्लि
आकाशाद्वायु।वायुरग्निः.अग्नेरापः। अद् भ्यः पृथिवी।पृथिव्या ओषधयः। २/१
ओषधीभ्योऽन्नम्। अन्नात्पुरुषः।स वा एष पुरुषोऽन्नम्। अन्नात्पुरुषः। स वा एष
पुरुषोऽन्नमयः।
63. अन्नं वृत्तिकराणां श्रेष्ठम्। च.सू.२५/४०
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आहारादेवाऽभिवृद्धिर्बलमारोग्यं वर्णेन्द्रिय -प्रसादश्च तथाहि
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65. वातपित्तश्लेष्माण एव देहसंभवः।तैरेवाव्यापन्नैरधोमध्योर्ध्वसन्निविष्टैः शरीरमिदं सु.सू.२९/३
धार्यतेऽगारमिव स्थूणाभिस्तिसृभिरतश्च त्रिस्थूणमाहुरेके।त एव व्यापन्नाः

प्रलयहेतवः।

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एभिस्त्रिभिर्भुक्तियुक्तैरुपस्तम्भमुपस्तम्बैः शरीरं बलवर्णोपचयोपचितमनुवर्तते
यावदायुः संस्कारात् संस्कारमहितमनुपसंहमानस्य , य इहैवोपदेक्ष्यते ।।

67. अथ अ.सं.नि.१/१५,१६,

तिक्तकटूकषायरुक्षलघुशीतविष्टम्भिविरुद्धकतृणधान्यकलायचणककरिर- १७, १९

तुम्बकलिङ्गचिर्भिटबिसशालूकजाम्बवतिन्दुकहीनशुष्कप्रमिततृषिताशन-

क्षुधिताम्बुपानासृक्षयविरेचनादिकर्मातिथेग.....।।१५।।

कट्वम्ललवणक्षारोष्णतीक्ष्णविदाहिशुक्तशाण्डाकीमद्यमूत्रमस्तुदधि-

धान्याम्लतैलकुलत्थमाषनिष्पावतिलान्नलट्वाकुठेरकादिवर्गाम्राप्रातकाम्लीकापी

लु-

भल्लातकास्थिलाङ्गलिकामरिचातप।।१६।।

मधुराम्ललवणस्निग्धगुरुशीतपिच्छलाभिष्यन्दिनवान्नपिष्टपृथुकस्थूल-

भक्ष्यशष्कुल्यामखीरकिलाटमोरटकूर्किकापिण्डकपीयूषेक्षुरसफअणितगुडानूपि
पशित-

मोचखर्जूरभव्यनालिकेरनिशाम्बुपानात्यम्बुपानातिसन्तर्पणभुक्तमात्रदिवास्वप्न.

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।।१७।।

सर्वेषां तु मिश्रीभावात्तथाऽनशनात्यशनाध्यशनसमशनविषमाशन -

विरुद्धाशनसङ्कीर्णाशनव्यापन्नाम्बुमद्यमन्दकदधियावकयवसुरापिण्याकाममूलक

सर्षपशुष्कशाकवल्लूरकृशपिशितवल्लूरामफलमृत्तिकाभ्यवहारान्न -

परिवर्ततुव्यापद....।।१९।।

68. तत्र --- सु.सू.२१/२१

कटुकषायतिक्तरुक्षलघुशीतवीर्यशुष्कशाकवल्लूरवरकोदालककोरदूषश्यामाक
नीवार -

मुद्गमसूराढकीहरेणुकलायनिष्पावानशनविषमाशनाध्यशन...वायुःप्रकोपमापद्यते

॥ सु.सू.२१/१९

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कुलत्थसर्षपातसीहरितकशाक -
गोधामत्साजाविकमांसदधितक्रकूर्चिकामस्तुसौवीरकसुराविकाराम्लफलकट्व
रप्रभृतिभिः पित्तं प्रकोपमापद्यते ॥
मधुराम्ललवणशीतस्निग्धगुरुपिच्छिलाभिष्यन्दिहायनकयवकनैषधेत्कटमाषमह
माषगोधूम-तिल-पिष्ट-विकृतिदधिदुग्धकृशरापायसेक्षु-
विकारानूषौदकमांसवसाबिसमृणालकसेरुकशृङ्गाटकममधुर-वल्ली-
फलसमशनाध्यश-नप्रभृतिभिःश्लेष्मा प्रकोपमापद्यते ॥२३॥

69. पित्तप्रकोपणैरेव चाभीक्ष्णं द्रवस्निग्धगुरुभिराहार— - सु.सू.२१/२५
अजीर्णविरुद्धाध्यशनादिभिर्विशेषैरसृक् प्रकोपमापद्यते ॥२५॥

70. गुरुशीतनतिस्निग्धमतिमात्रं समश्नताम् । रसवाहीनि दुष्यन्ति चिन्त्यानां चाति च.वि.५/१३
चिन्तनात् ॥

71. विदाहीन्यन्नपानानि स्निग्धोष्णानि द्रवाणि च । रक्तवाहीनि दुष्यन्ति भजतां च.वि.५/१४
चातपानलौ ॥

72. अभिष्यन्दीनि भजेज्यानि स्थूलानि च गुरुणि च । मांसवाहीनि दुष्यन्ति भुक्त्वा च.वि.५/१५
च स्वपतां दिवा ॥

73. अव्यायामाद् दिवास्वप्नान्मेद्यानां चातिभक्षणात् । मेदोवाहीनि दुष्यन्ति च.वि.५/१६
वारुण्याश्चातिसेवनात् ॥

74. मांसलैदूषितमांसमाहारैग्रन्थिमावहेत् । स्निग्धमहान्तंकठिनं अ.सं.उ.३४/८-९
सिरानद्धकफाकृतिम् ॥८॥
प्रवृद्धं मेदुरैर्मेदो नीतं मांसंऽथवात्वचि । वायुना कुरुते ग्रन्थिं भृशं स्निग्धं मृदुं
चलम् ॥

75. निजाः पुनः च.सू.१८/६
सहसातिगुर्वम्ललवणपिष्टान्नफलशाकरागदधिहरितकमद्यमन्दकविरु
 ढनवशूकशमीधान्यानूपौदकपिशितोपयोगान्मृत्पङ्कलोष्टभक्षणाल्लवणातिभक्षणा
 द्गर्भसंपीडनादामगर्भप्रपतनात् प्रजातानां च मिथ्योपचारादुदीर्णदोषत्वाच्चशोफाः
 प्रादुर्भवन्ति; इत्युक्तः सामान्य हेतुः ॥
76. अतिमात्रमथान्यस्य गुर्वम्लस्निग्धशीतलम् ॥२७॥ अ.सं.नि.१३/२७-२८
 लवणक्षारतीक्ष्णोष्णशाकाम्बुस्वप्नजागरम् ।मृद्
 ग्राम्यमांसवल्लूरमजीर्णश्रममैथुनम् ॥२८॥
77. शोफिनःसर्व एव परिहरेयुरम्ललवण दधिगुडवसापायस स्तैलघृतपिष्टमय सु.चि.२३/१०
 -गुरुणि ॥१०॥
78. पिष्टान्नमम्लं लवणानि मद्यं मृदं दिवास्वप्नमजाङ्गलमं च । स्त्रियो घृतं सु.चि.२३/१३
 तैलपयोगुरुणि शोफं जिघांसुः परिवर्जयेत् ॥
79. अजीर्णासात्म्यविषमविरुद्धात्यर्थभोजनात् । लवणाम्लकटुक्षारप्रक्लिन्नानां च च.चि.३० - २३२ -
 सेवनात् । २३२ ॥ २३५
 मनःशरीरसन्तपादस्वप्नात्रिणि चिन्तनात् । प्रप्तवेगप्रतीघातादप्राप्तोदीरणेन
 च ॥२३३॥
 परमान्नं गुडकृशरां दधि मन्दकम् । अभिष्यन्दीनि मांसानि ग्राम्यानूपौदकानि
 च ॥२३४॥
 भुक्त्वाभुक्त्वादिवास्वप्नान्मदद्वयस्यातिनिषेवणात् । अनायासादभीघातात्
 क्रोधाच्चातङ्ककर्शनैः ॥२३५॥
80. स एवंगुणोऽप्येक एवात्यर्थमुपयुज्यमानो दन्तान् हर्षयति, तर्षयति, च.सू.२६/४३
 संमीलयत्यक्षिणी, संवेजयति लोमानि, कफं विलापयति, पित्तमभिवर्धयति,
 रक्तं दूषयति, मांसं विदहति, कायं शिथिलिकरोति, क्षीणक्षतकृशदुर्बलानां
 धयथुमापादयति, अपि च क्षताभिहतदष्टदग्धभग्न शूनप्रच्युतावमूत्रित
 परिसर्पितमर्दित -चगच्छिन्नविशिलष्टोव्दिध्दोत्पिष्टादीनि

- पाचयतयाग्नेयस्वभावात्, परिदहति कण्ठमुरो हृद्यं च ।
81. अम्लो.....स एवं गुणोप्येक एवावात्यर्थमुपसेव्यमानो सु.सू.४२ - १०
दन्तहर्षनयनसम्मिलनरोमसंवेजनकफविलयनशरीरशैथिल्यान्यापादयति, तथा
क्षताभिहतग्धदष्टभग्नशूनरुग्णग्रच्युतावमूत्रितविसर्पितच्छिन्नभिन्नविद्धोत्पिष्टाद
ीनि पाचयत्याग्नेयस्वभावात् परिदहति, कण्ठमुरो हृद्यञ्जेति ॥
82. जनयति शिथिलत्वं सेवितः सोऽति देहे कफविलयनकण्डूपाण्डुतारुग्विघातान् अ.सं.सू.१८ - १०
।
क्षतविहितविसर्प रक्तपित्तं पिपासां श्वयथुमपि कृशानां तैजसत्वाभद्रमं च ॥
83. स एवंगुणोऽप्येक एवात्यर्थमयपयुज्यमानः पित्तं कोपयति, रक्तं वर्धयति, च.सू.२६/४३
तर्षयति, मूच्छयति, तापयति, दारयति, कुष्णाति मांसानि, प्रगालयति
कुष्ठानि, विषं वर्धयति, शोफान् स्फोटयति, दन्तांश्चयावयति, पुंस्त्वमुपहन्ति,
इन्द्रियाण्युपरुणधत्त, वलिपलितखालित्यमापादयति, अपि च
लोहितपित्ताम्लपित्तवीसर्पवातरक्तविचर्चिकेन्द्रलुप्तप्रभृतिन्विकारानुप -
जनयति ।
84. लवणः स एवंगुणअप्येक एवात्यर्थमासेव्यमानो सु.सू.४२ - १४
गात्रकण्डूकोटशोफवैवर्ण्यपुंस्त्वोपघातेन्द्रियोपताप मुखाक्षिपाक -
रक्तपित्तवातशोणिताम्लिकाप्रभृतीनापादयति ॥
85. खलितपलिततृष्णातापमूर्च्छाविसर्पश्वयथुकिटिभकोठाऽऽक्षेपरोधास्त्रपित्तम् । अ.सं.सू.१८ - १२
क्षतविषमदवृद्धिं वातरक्तं करोति क्षपयति बलमोजः सोऽति वा सेवनेन ॥
86. स एवंगुणोऽप्येक एवात्यर्थमुपयुज्यमानो विपाकप्रभावात् पुंस्त्वमुपहन्ति, च.सू.२६/४३
रसवीर्यप्रभावान्मोहयति, ग्लपयति, सादयति, कर्शयति, मूर्च्छयति, नमयति,
तमयति, भ्रमयति, कण्ठं परिदहति, शरीरतापमुपजनयति, बलं क्षिणोति,
तृष्णा जनयति; अपि च वाय्वग्निगुणबाहुल्याद्
भ्रमदवथुकम्पतोदभेदैश्चरणभुजपार्श्वपृष्ठप्रभृतिषु मारुतजान्
विकारानुपजनयति ।

87. कटुको स एवगुणोऽप्येक एवार्थमुपसेव्यमानो सु.सू.४२
 भ्रममदगलताल्वोष्ठशोषदाहसन्तापबलविघातकम्पतोदभेदकृत्
 करचरणपार्श्वपृष्ठप्रभृतिषु च वातशूलानापादयति ।।१५।।
88. कुरुतेऽतिनिषेवताः स तृष्णामदमूर्च्छादवमोहदेहसादान् । अ.सं.सू.१८
 बलशुक्रगलोपशोषकम्भ्रमतापग्लपनातिकर्शनानि ।।१६।।
 करचरणपार्श्वपृष्ठप्रभृतिष्वनिलस्य कोपमति
 तीव्रम् ।सङ्कोचतोदभेदैर्वाय्वग्निगुणअधिकत्वेन ।।१७।।
89. शीतं ल्हादनस्तम्भनजीवनरक्तपित्तप्रसादनादीनि । अ.सं.सू.१७
 शीतस्य प्रल्हादन-विष्यन्दन-स्थिरीकरण-प्रसादन-क्लेदन-जीवनानि । सु.सू.४१
 शीतंकफमारुतकृद्दीर्घं गुरु पित्तनाशनं बल्यम् । द्रव्यगुणसंग्रह
90. तत्र कर्माण्यप्युष्णस्य सु.सू.४१/११
 दहनपचनमूर्च्छनस्वेदनवमनविरेचनानि...उष्णस्निग्धौवातघ्नौ ।
 तत्रोष्णं.... विलयनानिलकफशमनानि करोति । अ.सं. १७
 तत्रोष्णंभ्रमतृङ्गलानिस्वेददाहाशुपाकिताः । शमं च वातकफयोः करोति । वा.सू.९
 उष्णंकफवातहरंपित्तकरंलघुअवृष्टं च । द्रव्यगुणसंग्रहः
91. लङ्घने लघुः । हे.अ.हृ.१
 लघुस्तद्वृत्तिविपरीतः स्याल्लेखनो रोपणस्तथा । सु.सू.४६
 लघु पथ्यं परंप्रोक्तंकफघ्नंशीघ्रपाकि च । भा.प्र
92. गुरु - पृथिवीसोमगुणभूयिष्ठोऽलघुः । च.शा.६/१०
 यस्य द्रव्यस्य बृंहणेशक्तिः सगुरुः ।हे. अ.हृ.सू.१/१८
 अयमग्निगुणविपरीतत्वदग्निमान्द्यकरः । अ.सं.सू.११
 अयं चिरपाकीगौरवं पार्थिवमाप्यञ्ज । र.वै.अ.३ सू.११६
 गुरुत्वं जलभूम्योः पतनकर्मकारणम् । प्र.पा.भ
 सादोपलेपबलकृद्गुरुस्तर्पणबृंहणः । सु.सू.४६

	गुरु वातहरंपुष्टिश्लेष्मकृच्चिरपाकि च ।	भा.प्र
93.	.यस्य शोधनेशक्तिः सतीक्ष्णः । दाहपाककरस्तीक्ष्णः स्रावणः । तीक्ष्णपित्तकरं प्रायोलेखनं कफवातहृत् ।	हे. सु. मा.
94.	यस्य क्लेदनेशक्तिः सस्निग्धः । स्नेहमार्दवकृत्स्निग्धोबलवर्णकरस्तथा । स्नेहाऽपाविशेषगुणाः । स्निग्धंवातहरंश्लेष्मकारिवृष्यं बलावहम् ।	५ शु प्र.पा.भा भा.प्र
95.	यस्य लेपनेशक्तिः सपिच्छिलः । पिच्छिलोजीवनो बल्यः संधानः श्लेष्मलोगुरुः । पिच्छिलोजीवनो बल्यः संधानः श्लेष्मलोगुरुः । पिच्छिलस्तन्तुलो बल्यः संधानः श्लेष्मलोगुरुः । पिच्छिलस्वाप्यम् ।	हे. सु. सु. भा. र.वै.सू.११२
96.	द्रवत्वं स्यन्दनकर्मकारणम् । यस्य विलोडनेशक्तिः सद्रवः । द्रवः क्लेदकरो व्यापी । द्रवः प्रक्लेदनः ।	प्र.पा.भा. हे. भा. सु.
97.	विदाहः -विरुद्धो विषमो वा दाहः ।	
98.	यत् अम्लोद्गारदाहतृष्णाप्रभृतिनुदीर्य कृच्छ्रात् पाकमुपगच्छति पित्तं च प्रकोपयति तद् द्रव्यम् ।	सु.सू.२१/२१
99.	विदाहि द्रव्यमुद्गारमम्लं कुर्यात्तथा तृषाम् । हृदि दाहश्च जनयेत् पाकं गच्छति तच्चिरात् ।।	भेमाद्रि
100.	द्रव्यस्वभावादथ गौरवाद्वा चिरेण पाकं जठराग्नियोगात् । पित्तप्रकोपं विदहत् करोति तदन्नपानं कथितं विदाहि ।	डल्हण सु.सू.४५/१५८
101.	अभिष्यन्दन - अभिष्यन्दकरं दध्यादि ।	अ. हृ. १३/१८
102.	दोषधातुमलस्रोतसां क्लेदप्राप्तिजनकम् ।	सु.सू.४६/५

103. गुण - उपलेपकारी सु. चि. ४०/३१
104. अभीमुखेन स्यन्दयति मालिन्यात् स्रोतसां स्रुतिरुपं श्लेष्माणं करोति। अ.हृ.६/२५
105. नवधान्यमभिष्यन्दि लघु संवत्सरोषितम्॥५१॥ सु.सू.४६
106. नवान्नं मधुरं स्निग्धं वातहृत् कफवर्धनम्। रक्तपित्तहरं चैव गुरु विष्टम्भी च कै.नि
स्मृतम्॥३०॥
107. एतेषु यवगोधुमतिलमाषा नवा हिताः। पुराणाविरसा रुक्षा न तथा भा.प्र. निघण्टु
गुणकारिणः॥
108. विदाहि गुरु विष्टम्भि विरुढं दृष्टिदूषणम्॥५१॥ सु.सू.४६
109. विरुढककृता भक्ष्या गुरवोऽनिलपित्तलाः॥४०९॥ सु.सू.४६/८६
विदाहोत्क्लेशजनना रुक्षा दृष्टिप्रदूषणाः।
110. ग्राम्या वातहराः सर्वे बृंहणाः कफपित्तलाः। मधुरा रसपाकाभ्यां दीपना सु.सू.४६/८६
बलवर्धनाः॥८६॥
111. आनूपं पञ्चधा मांसं तत्र कूलेचराः प्लवाः। कोशस्थाः पादिनो मत्स्यश्चेति कै.नि. मांसवर्गः
पूर्वरुदिताः॥३॥
112. मधुराः रसपाकाभ्यां सुस्निग्धाः बलिनो हिमाः॥२९॥ कै.नि. मांसवर्गः
शुक्रला मूत्रला वातपित्तघ्नाः कफवर्धनाः।
113. गव्यं मांसं गुरु स्निग्धं वीर्योष्णं पाचनं जयेत्। कै.नि. मांसवर्गः
शुष्ककासश्रमात्याग्निविषमज्वरपीनसान्॥६७॥
कृश क्षीणबलश्चासरोचकान् केवलानिलान्।
114. गोमांसं तु गुरु स्निग्धं पित्तश्लेष्मविवर्धनम्॥३७४॥ ध.नि. सुवर्णादि षष्ठो
बृंहणं वातहृद् बल्यमपथ्यम् पीनसप्रणुत्।कीर्तितं नात्यभिष्यन्दि मांसं प्रयस्तु वर्गः
जाङ्गलम्॥३७५॥
115. माहिषं तर्पणं स्निग्धं कषायं मधुरं गुरु। कै.नि. मांसवर्गः
उष्णं रेतोबलस्तन्यस्वप्नदाढ्यर्चबृंहत्वकृत्॥६२॥
116. स्निग्धोष्णो महिषस्तिक्तो निद्राशुक्रबलप्रदः। मधुरस्तर्पणो वृष्यो गुरुमांसश्च ध.नि. सुवर्णादि षष्ठो
दाढ्यकृत्॥३७२॥ वर्गः

- तद्दृदरण्यजो ज्ञेयो विशेषाच्छोणिते हितः ।
117. सौकरं पिशितं बल्यं तर्पणं बृहणं गुरु। स्वादुम्लपाकं स्निग्धोष्णं शुक्रलं कै.नि. मांसवर्गः
स्पर्शशीतलम् ॥७९॥
118. स्नेहनं बृहणं वृष्यमामघ्नमनिलापहम्। वाराहं स्वेदनं बल्यं रोचनं श्रमनुद् ध.नि. सुवर्णादि षष्ठो
गुरु ॥३६७॥ ग्रामसूकरजं विस्त्रं पित्तलं बलकृद्गुरु। वर्गः
119. शीतलाः शुक्रलाः स्निग्धाः मधुराः रसपाकयोः। कै.नि. मांसवर्गः
लोहितानिलपित्तघ्नाः सृष्टमूत्रपुरीषकाः ॥३३॥
120. शङ्खकूर्मादयः स्वादुरसपाकाः मरुद्धराः ॥३५॥ कै.नि. मांसवर्गः
वर्चस्याः शीतलाः स्निग्धाः हिताः पित्ते कफावहाः।
121. मत्स्याः स्निग्धोष्णमधुरा बृंहणा वातनाशनाः ॥३७॥ कै.नि. मांसवर्गः
गुर्वाभिष्यन्दिनो बल्या वृष्याः पित्तकफावहाः।
122. इत्यानूपो महाभिष्यन्दी मांसवर्ग उदाहृतः ॥३८॥ कै.नि. मांसवर्गः
123. वल्लूरपिण्याकबिसानि चैव विरुद्धान्यानि च शुष्क मत्स्याः। सर्वाणि वातं कै.नि. मांसवर्गः
जनयन्ति पित्तं तापं परं चापहरन्ति पुंस्त्वम् ॥२५९॥
124. अरोचकं प्रतिश्यायं गुरु शुष्कं प्रकीर्तितम् ॥१२७॥ सु.सू. ४६
125. कटून्युष्णानि रुच्यानि वातश्लेष्महराणि च। सु.सू. ४६/२२२
कृतात्रेषूपयुज्यन्ते संस्कारार्थमनेकधा ॥२२२॥
126. केवलं सौषधं पक्वमुष्णं हितं च तत्। समीक्ष्य मात्रया युक्तममृतं विषमन्यथा ॥ अ.सं.सू ६ – ३२
127. अत्यम्बुपानान्न विपच्यतेऽन्नमनम्बुपानाच्च स एव दोषः। अतो नरो भा.प्र
वन्धिविबर्धनायनमुहुर्मुहुवार्ति - पिबेदभूरि ॥
128. अरोचके प्रतिश्याये प्रसेके श्वयथौ क्षये ॥४५॥ मन्देऽग्नावुदरे कुष्ठे ज्वरे सु.सू. ४५/४६
नेत्रामये तथा। व्रणे च मधुमेहे च पानीयं मन्दमाचरेत् ॥
129. अनवस्थितदोषाग्नेर्व्याधिकीणबलस्य च। नाल्पमप्याममुदकं हितं तद्धि अ.सं.सू ६
त्रिदोषकृत् ॥३८॥
तेजसः प्रतिपक्षत्वान्मन्दाग्निर्वर्जयेज्जलम्। सर्वमेव तथा
स्पन्दप्लीहविद्रधिगुल्मिनः ॥ ३९॥

- पाण्डुरातिसारार्शोग्रहणीशोषशोफिनः । काममल्पमशक्तौ तु
पेयमौषधसंस्कृतम् ॥४०॥
- ऋते शरदन्निदाघाभ्यां पिबेत्स्वस्थोऽपि चाल्पशः ।
130. अजीर्णे भेषजं वारि जीर्णे वारि बलप्रदम् । ध.नि. सुवर्णादि षष्ठो
अमृतं भोजने वारि भुक्तस्योपरि तद्विषम् ॥३१५॥ वर्गः
131. सर्व दधि तु मधुरमम्लञ्चेति तत्कषायानुरसं स्निग्धमुष्णं सु.सू.४५
पीनसविषमज्वरातिसारारोचकमूत्रकृच्छ्रः काश्यापहं वृष्यं प्राणकरं
मङ्गल्यञ्च ॥६५॥
132. महाभिष्यन्दि मधुरं कफमेदोविवर्धनम् । कफपित्तकृदम्लं स्यादत्यम्लं सु.सू.४५
रक्तदूषणम् ।
विदाहिसृष्टविष्मूत्रं मन्दजातं त्रिदोषकृत् ॥६६॥
133. वीर्योष्णाः पैष्टिका भक्ष्याः कफपित्तप्रकोपणाः । विदाहिनो नातिबला गुरवश्च सु.सू.४६
विशेषतः ॥४०६॥
134. हृद्याः सुगन्धिनो भक्ष्या लघवो घृतपाचिताः ॥४१०॥ सु.सू.४६
वातपित्तहरा बल्या वर्णदृष्टिप्रसादनाः ।
135. विदाहिनस्तैलकृता गुरवः कटुपाकिनः ॥४११॥ सु.सू.४६
उष्णा मारुतदृष्टिघ्नाः पित्तलास्त्वक्प्रदूषणाः ॥४१२॥
136. लघवो बृंहणा वृष्या हृद्या रोचनदीपनाः । तृष्णामूर्च्छाभ्रमच्छर्दिश्रमघ्ना सु.सू.४६/१८८
रागषाडवाः ॥१८८॥
137. कट्वम्लस्वादुलवणा लघवो रागषाडवाः । मुखप्रियाश्च हृद्याश्च दीपना च.सू.२७/२८१
भक्त्रोचनाः ॥ २८१॥
138. क्षारः पुनरौष्यतैक्ष्ण्यलाघवापपन्नः क्लेदयत्यादौपश्चाद्विशोषयति, स च.वि.१
पचनदहनभेदनार्थमुपयुज्यते; सोऽतिप्रयुज्यमानः केशाक्षिहृदयपुंस्त्वोपघातकेः
संपद्यते । येह्येनग्रामनगरनिर्गमजनपदाः सततमुपयुञ्जते त
आन्ध्यषाण्ड्यखालित्यपालित्यभाजो हृदयापकर्तिनश्च भवन्ति, तद्यथा -
प्राच्याश्चीनाश्च; तस्मान् क्षारं नात्युपयुञ्जीत ॥१७॥

139. हिताहितोपसंयुक्तमन्नं समशनं स्मृतम् । सु. सू. ४६ / ५१५,
 बहु स्तोकमकाले वा विज्ञेयं विषमाशनम् ॥ ५१६
 अजीर्णं भुज्यते यत्तु तदध्यशनमुच्यते ।
 त्रयमेतिन्नहन्त्याशु बहून् व्याधीन् करोति वा ॥
140. यथाकालेऽतिमात्रं यत् तद्भवेद्विषमाशनम् । बहुस्तोकमकाले वा ज्ञेयं भा.प्र.पूर्व खण्ड
 तद्विषमाशनम् ॥१५१॥ दिनचर्यादि प्रकरणम्
141. नाप्राप्तातीतकालं वा हीनाधिकमथापि वा । सु. सू. ४६/ ४७७,
 अप्राप्तकाले भुञ्जानः शरीरे ह्यलघौ नरः ॥ ४७८
 तांस्तान् व्याधीनवाप्नोति मरणं वा नियच्छति ।
 अतीतकाले भुञ्जानो वायुनोपहतेऽनले ॥
142. अप्राप्तकाले भुञ्जानो ह्यसमर्थतनुर्नरः । तांस्तान् व्याधीनवाप्नोति मरणं भा.प्र.पूर्व खण्ड
 चाधिगच्छति ॥१५३॥ दिनचर्यादि प्रकरणम्
 अप्राप्तकाले कालादतिप्राग् भुञ्जानोऽसमर्थशरीरो भवति । तथा सति तांस्तान्
 व्याधीन् शिरोव्यथा विषूचिकाऽलसक -विलम्बिकाऽऽदीन् प्राप्नोति ।
 तेषामाधिक्ये मरणमपि प्राप्नोतीत्यर्थं ॥१५३॥
 कालेतीतेश्नातो जन्तोर्वायुनोपहतेनले । कृच्छ्रद्विपच्यते भुक्तं न स्याद्भोक्तुं
 पुनः स्पृहा ॥ १५४ ॥
143. यावद्ध्यस्याशनमिशतमनुपहत्य प्रकृतिं यथाकालं जरां गच्छित तावदस्य च.सू.५/४
 मात्राप्रमाणं वेदितव्यं भवित ॥
144. त्रिभागसौहित्यमर्धसौहित्यं वा गुरुणां समुपदिश्यते ॥६॥ अ.सं.सू.११
 लघुनामपि च नातिसौहित्यम् ॥ ७ ॥
145. मात्राशी स्यात् । ३ अ.सं.सू.११
 मात्रा पुनरग्निबलाहारद्रव्यापेक्षिणी ॥४॥
146. कुक्षेरप्रतिपिडनमाहारेण हृदयस्यासंरोधः पार्श्वयोरविपातनमनतिगौरवमुदरस्य अ.सं.सू.११
 प्रीणनमिन्द्रियाणां क्षुत्पिपाससोपरतिः
 स्वस्थानासनशयनगमनोच्छ्वासप्रश्वासहास्यसंकथसु सुखानुवृत्तिः सायं

- प्रातःश्च सुखेन परिणमनं बलवर्णोपचयकरत्वं चेति मात्राया लक्षणम् ॥५॥
147. अमात्रापुनरशनस्य हीनताऽऽधिक्यं च ॥१०॥ अ.सं.सू.११
148. बलवर्णोपचयमनोबुद्धीन्द्रियोपघातकरंविबन्धकृदवृष्यमनायुष्यमनौजस्यंसारविध- अ.सं.सू.११
 ापनमलक्ष्मीजननमशीतेश्च वातविकारणामायतनम् ॥११॥
 अतिमात्रं पुनः सर्वदोषप्रकोपनमाहुः ॥१२॥
 तेन हि प्रपीड्यमाना वातादयो युगपत्प्रकुपिताः
 कुक्ष्यैकदेशस्थास्तदेवापरिपक्वमाविश्य
 विष्टम्भयन्तोऽलसकमभिनिर्वृतयन्ति,सहसा वाऽधरोत्तराभ्यां मार्गाभ्यां
 प्रच्यावयन्तो विसूचिकाम् ॥१३॥
149. अतिमात्रं पुनः सर्वदोषप्रकोपणमिच्छन्ति कुशलाः। यो हिमूर्तानामारजानां च.वि.२/७
 सौहित्यं गत्वा द्रवैस्तृप्तिमापद्यते भूयस्तस्यामाशयगता
 वातपित्तश्लेष्माणोऽभ्यवहरणातिमात्रेणातिप्रपीड्यमानाः सर्वयुगपत्
 प्रकोपमापद्यन्ते, ते प्रकुपिता स्तमेवाहारराशिमपरिणतमाविश्य
 कुक्षेकदेशमन्नाश्रिता विष्टम्भयन्तः सहसा वाऽप्युत्तराधराभ्यां मार्गाभ्यां
 प्रच्यावयन्तः पृथक् पृथगिमान् वेकारानभिनिर्वृतयन्त्यतिमात्रभोक्तुः। तत्र
 वातः शूलानाहङ्गमर्दमुखशोषमूर्च्छाभ्रमाग्निवैषम्यपार्श्वपृष्ठकटिग्रह -सिराकुञ्चन
 स्तम्भनानि करोति, पित्तं पुनर्ज्वरातीसारान्तर्दाहतृष्णामदब्रमप्रलापनानि
 श्लेष्मा तु छर्द्यरोचकाविपाकशीतज्वरालस्यगात्रगौरवाणि ॥७॥
150. कृच्छ्राद्धिपच्यते भुक्तं द्वितीयञ्च न काडक्षति। हीनमात्रामसन्तोषं करोति च सु. सू. ४६/ ४७९,
 बलक्षयम् ॥ ४८०
- आलस्यगौरवाटोसादांश्च कुरुतेऽधिकम्।
151. आलस्यगौरवाटोपसादांश्च कुरुतेऽधिकम्।हीनमात्रं तनोःकार्श्यं करोति च भा.प्र.पूर्व खण्ड
 बलक्षयम् ॥१५२॥ दिनचर्यादि प्रकरणम्
152. यत् किञ्चिद्दोषमास्त्राव्य न निर्हरति कायतः। आहारजातं तत् च.सू.२६
 सर्वमहितायोपपद्यते ॥ ८५॥
153. उत्क्लेश्यदोषात्र हरेद्रद्यं यत्तत्समासतः।विरुद्धं तद्धि धातूनां प्रत्यनीकतया अ.सं. सू.९

स्थितम् ॥२५॥

154. यच्चापि देशकालाग्निमात्रासात्म्यानिलादिभिः। संस्कारतो वीर्यतश्च च.सू.२६
कोष्ठावस्थाक्रमैरपि ॥८६॥
परिहारोपचाराभ्यां पाकात् संयोगताऽपि च। विरुद्धं तच्च न हितं
हृत्संपद्विधिभिश्च यत् ॥ ८७॥
155. विरुद्धं देशतस्तावदूक्षतीक्ष्णादि धन्वानि। आनूपे स्निग्धशीतादि भेषजं च.सू.२६
यन्निषेवते ॥८८॥
156. कालतोऽपि विरुद्धं यच्छीतरुक्षादिसेवनम्।शीते काले, तथोष्णे च च.सू.२६
कटुकोष्णादि सेवनम् ॥८९॥
157. विरुद्धमनले तद्ददन्नपानं चतुर्विधे । मधुसर्पिः समघृतं मात्रया च.सू.२६
तद्विरुद्धयते ॥९०॥
158. कटुकोष्णादिसात्म्यस्य स्वादुशीतादिसेवनम्।यत्तत् सात्म्यविरुद्धं तु -- । च.सू.२६
159. विरुद्धं त्वानिलादिभिः ॥९१॥ च.सू.२६
या समानगुणाभ्यासविरुद्धान्नौषधक्रिया।
160. संस्कारतो विरुद्धं तद्यद्भोज्यं विषवद्भवेत् ॥९२॥ च.सू.२६
एरण्डसीसकासक्तं शिखिमांसं यथैव हि।
161. विरुद्धं वीर्यतो ज्ञेयं वीर्यतः शीतलात्मकम् ॥९३॥ च.सू.२६
तत् संयोज्योष्णवीर्येण द्रव्येण सह सेव्यते।
162. क्रूरकोष्ठस्य चात्यल्पं मन्दवीर्यमभेदनम् ॥९४॥ च.सू.२६
मृदुकोष्ठस्य गुरुच भेदनीयं तथा बहु। एतत् कोष्ठविरुद्धं तु -- ।
163. विरुद्धं स्यादवस्थया ॥९५॥ च.सू.२६
श्रमव्यवायव्यायामासक्तस्यानिलकोपनम्।निद्रालसस्यालस्य भोजनं
श्लेष्मकोपनम् ॥९६॥
164. यच्चानुसृज्य विण्मूत्रं भुङ्क्ते यश्चाबुभुक्षितः। तच्च क्रमविरुद्धं च.सू.२६
स्याद्यच्चातिक्षुद्रशानुगः ॥९७॥
165. परिहारविरुद्धं तु वराहादीन्निषेव्य यत्। सेवेतोष्णं घृतादींश्च पीत्वा शीतं च.सू.२६

निषेवते ॥१८॥

166. विरुद्धं पाकतश्चापि दुष्दुर्दारुसाधतिम्। अपक्व तण्डुलात्यर्थपक्वदग्धं च च.सू.२६
यद्भवेत्।
167. संयोगतो विरुद्धं तद्यथाऽम्लं पयसा सह ॥१९॥ च.सू.२६
168. बलिनां मिथोगुणानां विषमतया समतयाऽप्युभयथाऽपि। संस्कारादिवशादपि अ.सं. सू.९ – २६, २७
भवति निसर्गादपि विरोधः ॥
क्षीरं कुलत्थैः पनसेन मत्स्यैस्तप्तं दधि क्षौद्रघृते समांशे। वार्युषरे रात्रिषु
सक्तवश्च तोयन्तरसस्ते यवकास्तथैव ॥
169. अमनोरुचितं यच्च हृद्विरुद्धं तदुच्यते। च.सू.२६
170. संपद्विरुद्धं तद्विद्यादसंजातरसं तु यत् ॥१००॥ च.सू.२६
अतिक्रान्तरसं वाऽपि विपन्नरसमेव वा।
171. ज्ञेयं विधिविरुद्धं तु भुज्यते निभृते न यत्। तदेवंविधमन्नं च.सू.२६
स्याद्विरुद्धमुपयोजितम् ॥१०१॥
172. न मत्स्यान् पयसा सहाभ्यावहरेत्, उभयं ह्येतन्मधुरं मधुरविपाकं च.सू.२६
महाभिष्यन्दि शीतोष्णत्वाद्विरुद्धवीर्यत्वाच्छोणितप्रदूषणाय
महाभिष्यन्दित्वान्मार्गोपरोधाय च ॥८२॥
173. ग्राम्यानूपौदकपिशितानि च मधुतिलगुडपयोमाषमूलकबिसैर्विरुद्धान्यैर्वा च.सू.२६
नैकध्यमद्यात्, तन्मूलं हि बाधिर्यान्ध्यवेपथुजाड्यकलमूकतामैष्मिण्यमथवा
मरनमाप्नोति।
न मूलकलशूनकृष्णगन्धार्जकसुमुखरसादीनि भक्षयित्वा पयः सेव्यं,
कुष्ठाबाधभयात्।
तदेव निकुचं पक्वं न माषसूपगुडसर्पिर्भिः सहोपयोज्यम्, वैरोधिकत्वात्;
...न च निकुचं पक्वं मधुपयोभ्यां सहोपयोज्यम्, एतद्वि मरणायाथवा
बलवर्णतेजोवीर्योपरोधायालघुव्याधये षण्ड्याय चेति।
तथाऽऽम्रातातकमातुलुङ्गनिकुचकरमर्दमोचदन्तशठबदरकोशाग्रभ्यजाम्बवकी
पत्थतिन्तिडिकपारावताक्षोडपनसनारिकेर

दाडिमामलकान्येवंप्रकाराणि चान्यानि द्रव्याणि सर्वं चाम्लं द्रवमद्रवं च पयसा
सह विरुद्धम्। तथाकङ्कुवनकमकुष्ठककुलत्थमाषनिष्पावाः पयसा सह
विरुद्धाः।

मधुचोष्णमुष्णार्तस्य च मधु मरूय। मधुसर्पिषी समघृते, मधुवारि चान्तरिक्षं
समघृतं, मधुपुष्करबीजं, मधु पीत्वोदकं, भल्लातकोष्णोदकं तक्रसिद्धः
कम्पिल्लकः...॥ ८४॥

174. सर्वं चाम्लं द्रवमद्रवंपयसैकध्यं विरुद्धं तत उत्तरं वा विरुद्धं फलं च। अ.सं.९
कङ्कुवरकमकुष्ठककुलत्थमाषनिष्पावाश्च॥६॥
175. न मूलकादि हरितकं भक्षयित्वा पयः सेव्यं कुष्ठाबाधभयात्॥७॥ अ.सं.९
176. दध्ना कुक्कुटच। अ.सं.९
क्षीरेण लवणम् । मूलकेन माषसूपम्। नवनीतेन मूलशाकम्।विरुढकानि दध्ना
माषसूपेन गुडेन मधुना घृतेन वा लकुचफलम्।दध्ना तत्रेण तालफलेन वा
कदलीफलम्॥९॥
177. मधुसर्पिवसातैलोदकानि समघृतानि द्विशस्त्रिशः समस्तानि वा॥१४॥ अ.सं.९
178. शीतोष्णं नवपुराणमामपक्वं च नैकध्यमद्यात् ॥२१॥ अ.सं.९
179. व्याधिमिन्द्रियदौबल्यं मरणं चाधिगच्छति । सु.सू.२०/१९ -२०
विरुद्धरसवीर्याणि भुञ्जानोऽनात्मवान्नरः॥
यत्किञ्चिद्दोषमुत्त्वलेश्य भुक्तं कायान्न निर्हरेत्। रसादिष्वयथार्थं वा त्दिकाराय
कल्पते॥
180. विस्फोटशोफमदविद्रधिगुल्मयक्ष्मतेजोबलस्मृतिमतीन्द्रियचित्तनाशान्। अ.सं.९
कुर्याद्विरुद्धमशनं ज्वरमस्रपित्तमष्टौ गदांश्च महतो विषवच्च मृत्युम्॥२१॥
181. किलासकुष्ठग्रहणीगदानां शोथाम्लपित्तज्वरपीनसानाम्। च.सू.२६/१०३
संतानदोषस्य तथैव मृत्योर्विरुद्धमन्नं प्रवदन्ति हेतुम्॥
182. अन्नमादानकर्मा तु प्राणः कोष्ठं प्रकर्षति। तद्वावैर्भिन्नसङ्घातं स्नेहेन मृदुतां च.चि.१५/६ -१८
गतम्॥
समानेनावधूतोऽग्निरुदीर्यः पवनादहः। काले भुक्तं समं सम्यक्

पचत्यायुर्विवृद्धये ॥

एवं रसमलायान्नमाशयस्थमधःस्थितः । पचत्यग्निर्यथा

स्थाल्यामोदनायाम्बुतण्डुल् ॥

अन्नस्य भुक्तमात्रस्य षड् रसस्य प्रपाकतः । मधुराद्यात् कफो भावात् फेनभूत
उदीर्यते ॥

परं तु पच्यमानस्य विदग्धस्याम्लभावतः । आशयाच्चावमानस्य
पित्तमच्छमुदीर्यते ॥

पक्वाशयं तु प्राप्तस्य शाष्यमाणस्य वन्हिना । परिपिण्डतपक्वस्य वायुः स्यात्
कटुभावतः ॥

भौम्याप्याग्नेयवायव्याम्भसाः पञ्चोष्माणः सनाभसाः ।

पञ्चाहारगुणान्तरत्वान्पार्थिवादीन्पचन्तिहि ॥

यथास्वं स्वं च पुष्णान्ति देहं द्रव्यगुणान् पृथक् । पार्थिवाः पार्थिवानेव शाषाः
शेषांश्च कृत्स्नशः ॥

सप्तभिर्देहधातारो धातवो द्विविधं पुनः । यथअस्वमग्निभिः पाकं यान्ति
किट्टप्रसादवत् ॥

रसाद्रक्तं ततो मांसं मांसान्मेदस्ततोस्थि च । अस्थनो मज्जा ततः शुक्रं
शुक्राद्गर्भः प्रसादजः ॥

रसात् स्तस्यं ततो रक्तमसृजः कण्डराःसिराः । मांसाद्दसा त्वचः षट् च
मेदसःस्नायुसंभवः ॥

किट्टमन्नस्य विष्मूत्रं रसस्य तु कफोसृजः । पित्तं, मांसस्य खमला,
मलःस्वेदस्तु मेदसः ॥

स्यात्किट्टं केशलोमास्थनो मज्जः स्नेहो ऽक्षिविट् त्वचाम् । प्रसादकिट्टे धातूनां
पाकादेवं विधर्च्छतः ॥

183. परस्परोपसंस्तब्धा धातुस्नेहपरम्परा ।

च.चि.१५

व्यानेन रसधातुर्हि विक्षेपोचितकर्मणा । युगपत् सर्वतोऽजस्रं देहे विक्षिप्यते
सदा ॥३६॥

क्षिप्यमाणः खवेगुण्याद्रसः सज्जति यत्र सः। करोति विकृतिं तत्र खे
वर्षामिवतोयदः॥३७॥

दोषाणामपि चैवं स्यादेकदेशदेशप्रकोपणम्। इति भौतिकधात्वन्नपक्तृणां कर्म
भाषितम्॥३८॥

184. आहारपरिणामकरास्तु इमे भावा भवन्ति । तद्यथा ऊष्मा वायुः क्लेदः स्नेहः च.शा.६/१३
कालः समयोगश्चेति । तत्र तु खलु एषाम् ऊष्मादीनां आहारपरिणामकराणां
भावानां इमे कर्मविशेषा भवन्ति । तद्यथा - ऊष्मा पचति वायु अपकर्षयति
क्लेदः शैथिल्यमापादयति स्नेहो मार्दवं जनयति कालः पर्याप्तिम्
अभिनिर्वर्तयति समयोगस्तु एषां परिणामधातुसाम्यकरः संपद्यते ।
185. प्राणापानसमानैस्तु त्रिभिः पवनैः जाठराग्निः ध्मायते पाल्यते । सु.सू.३५/२८
186. यामैश्चतुर्भिर्द्वाभ्यां च भोज्यभैषजयोः समे । पाकोऽग्नौ युक्तयोर्द्राक् च तीक्ष्णे अ.सं.सू.११/६१
मंदे पुनश्चिरात् ।।
187. स खलु विधिवद् अभ्यवहृतम् अन्नजातं प्राणेन वायुना कोष्ठमाकृष्टम् अ. सं. शा.६/७६
द्रवैर्विभिन्नसंघातं स्नेहेन मृदुकृतं अभिसंधुक्षितः समानेन आमाशयस्थं
स्थालिस्थमिव अम्बुतंडुलम् अंतराग्निः पचति ।
188. अत्र क्रमवादिनः आहुः - पुरुषेण भुज्यमानम् अन्नं कठिनतरदशनाभिघात सु.शा.४/१९
जर्जरितं प्रयत्नेन उदीरितेन प्रणाख्येन अनिलेन कंठनाड्यामहास्रोतसि
निक्षिप्तं नाभिदेशचारिणा समानेन नाभिपार्श्वं ग्रहण्याख्यपित्तधरा -कलामर्यादे
आमाशयेविधृतं द्रव्येण जलादिना विभिन्नसंघातं स्नेहेन च मार्दवम् आपादितं
पाचकेनेव समानेन संधुक्षितः प्रदीपितः सन् अंतराग्निः पचति । यथा अग्निः
बाह्यतोयतण्डुलं स्थालिस्थं पचति । इन्दुटीकायाम् ।
अशितं खादितं पीतं लीढं कोष्ठगतं नृणाम् । तज्जीर्यति यथाकालं शोषितं
पित्ततेजसा ।।
189. तत्रेमे शरीरधातुगुणाः सङ्ख्यासामर्थ्यकराः; तद्यथा - च.शा.६
गुरुलघुशीतोष्णस्निग्धरुक्षमन्दतीक्ष्णस्थिरसरमृदुकठिनविशदपिच्छिलश्लक्ष्णख
रसूक्ष्मस्थूलसान्द्रद्रवाः । तेषु ये गुरवस्ते

गुरुभिराहारविकारगुणैरभ्यस्यमानैराप्याय्यन्ते, लघवश्च ह्रासन्ति; लघवस्तु लघुभिराप्याय्यन्ते, गुरवश्च ह्रासन्ति। एवमेव, सर्वधातुगुणानां सामान्ययोगाद् वृद्धिः; विपर्ययाद्घ्रासः। तस्मान्मांसमाप्याय्यन्ते मांसेन भूयस्तरमन्येभ्यः शरीरधातुभ्यः; तथा लोहितं लोहितेन; मेदो मेदसा, वसा वसया, अस्थि तरुणास्थना, मज्जा मज्जा, शुक्रं शुक्रेण, गर्भस्त्वामगर्भेण॥१०॥

190. यत्र त्वेवं लक्षणेन सामान्येन सामान्यवतामाहारविकाराणामसान्निध्यं स्यात्, च.शा.६ सन्निहितानां वाऽप्ययुक्तत्वान्नोपयोगो घृणित्वादन्त्यस्माद् वा कारणात्, स च धातुरभिवर्धयितव्यः स्यात्, तस्य ये समानगुणाः स्युराहारविकारा असेव्याश्च, तत्र समानगुणभूयिष्ठानामन्यप्रकृतीनामप्याहारविकाराणामुपयोगः स्यात् । तद्यथा - शुक्रक्षये क्षीरसर्पिषोरुपयोगो मधुरस्निग्धशीतसमाख्यातानां चापरेषां द्रव्याणां,॥११॥
191. आयुर्वर्णबलं स्वास्थ्यमुत्साहोपचयौ प्रभा। ओजस्तेजोऽग्नयः प्राणश्चोक्ता च.चि. १५ देहाग्निहेतुकाः॥३॥ शान्तेऽग्नौ म्रियते, युक्ते चिरं जीवत्यनामयः।रोगी स्याद्विकृते, मूलमग्निस्तस्मान्निरुच्यते॥४॥
192. यदन्नं देहधात्वोजोबलवर्णादि पोषकम्। तत्राग्निर्हेतुराहारान्न च.चि. १५ ह्यपक्वाद्रसादयः॥५॥
193. अन्नस्य पक्ता सर्वेषां पक्त्वणामधिपो मतः। तन्मूलास्ते हि च.चि.१५ तद्वृद्धिक्षयात्मकाः॥३१॥ तस्मात्तं विधिवद्युक्तैरन्नपानैर्हितैः। पालयेत् प्रयतस्तस्य स्थितौ ह्यायुर्बलस्थितिः॥४०॥ यो हि भुङ्क्ते विधित्यक्त्वा ग्रहणीदोषजान् गदान्।स लौल्याल्लभते शीघ्रं, वक्ष्यन्तेऽतः परं तु ते॥४१॥
194. विरुद्धाध्याजीर्णानशिलिनः पुनरामदोषमामविषमामनन्ति अ.सं.सू.११ विषसदृशल्लिङ्गत्वात्तत्परमसाध्यमाशुकारितया विरुद्धोपक्रमत्वाच्च॥११॥

195. तथा हि — अ.सं.सू. ११
 गुरुरुक्षशुष्कशीतद्विष्टविष्टम्भिविदाह्याशुचि विरुद्धात्यम्बुपानद्रवमकाले वा
 कामक्रोधलोभेष्याह्नीशोकोद्वेग भयक्षुद्रुपतप्तेन वा यदन्नपानमुपयुज्यते
 तदप्याममेव प्रदूष्यति ॥२१॥
196. ऊष्मणोऽल्पबलत्वेन धातुमाद्यमपाचितम्। दुष्टमामाशयगतं रसमामं अ. ह. १३
 प्रचक्षते ॥२५॥
 अन्ये दोषेभ्य एवातिदुष्टेभ्योऽन्योन्यमूर्च्छनात्।कोद्रवो विषस्येव वदन्त्यामस्य
 सम्भवम् ॥२६॥
 आमेन तेन सम्पृक्ता दोषा दूष्याश्च दूषिताः।सामा इत्युपदिश्यन्ते ये च
 रोगास्तदुद्भवाः ॥२७॥
197. जृम्भाऽङ्गमर्तृष्णा च ज्वरच्छर्दिप्रवाहणम्। अरोचकाऽविपाकश्च घोरमन्नविषं च च.चि. १५
 तत् ॥४६॥
 संसृज्यमानेन पित्तेन दाहं तृष्णां मुखामयान्।जनयत्यम्लपित्तं च
 पित्तजांश्चापरान् गदान् ॥४७॥
 यक्ष्मपीनसमेहादीन् कफजान् कफसङ्गतम्।करोति वातसंसृष्टं वातजांश्च
 गदान् बहून् ॥४८॥
 मूत्र रोगांश्च मूत्रस्थ कुक्षिरोगान् शकृद्गतम्।रसादिभिश्च संसृष्टं कुर्याद्रोगान्
 रसादिजान् ॥४९॥
198. विषमो धातुवैषम्यं करोति विषमं पचन्। तीष्णाये मन्देन्धनो धातून् विशोषयति च.चि. १५
 पावकः ॥५०॥
 युक्तं भुक्तवतो युक्तो धातुसाम्यं समं पचन्।दुर्बलोविदहत्यन्नं
 तद्यात्यूर्ध्वमधोऽपि वा ॥५१॥
199. सप्तविधाः खलु रोगा भवन्ति - सहजगर्भजातपीडाकालप्रभावस्वभावजाः।ते अ.सं.सू. २२
 तु पृथक् द्विधाः। तत्र सहजाः शुक्रार्तवदोषान्वयाः कुष्ठार्शोमेहादयः पितृजा
 मातृजाश्च ॥३॥
200. तत्तु सप्तविधे व्याध्यावुपनिपतति। ते पुनः सप्तविधा व्याधयः। तद्यथा - सु.सू. २४/५-६

आदिबलप्रवृत्ताः, जन्मबलप्रवृत्ताः, दोषबलप्रवृत्ताः, सङ्घातबलप्रवृत्ताः..... ।।

तत्रादिबलप्रवृत्ता ये शुक्रशोणितदोषान्वयाः कुष्ठार्शःप्रभृतयः, तेऽपि द्विविधाः

- मातृजाः पितृजाश्च ।

201. जातः प्रमेही मधुमेहिनो वा न साध्य उक्तः सहि बीजदोषात् । च.चि.६/५७
ये चापि केचित् कुलजा विकारा भवन्ति तांश्च प्रवदन्त्यसाध्यान् ।।
202. तेजः रेतः बीजं वीर्यम् इन्द्रियम् इत्येते शुक्रस्य पर्यायाः । अमरकोष ६/२/६२
203. रसादेव स्त्रिया रक्तं रजःसंज्ञं प्रवर्तते । तद्वर्षाद् द्वादशादूर्ध्वं याति पञ्चाशतः सु.सू.१४/
क्षयम् ।।६।।
आर्तवं शोणितं त्वाग्नेयमग्नीषोमीयत्वाद् गर्भस्य ।।७।।
204. ध्रुवं चतुर्णां सान्निध्याद्गर्भः स्याद्विधिपूर्वकः । ऋतुक्षेत्राम्बुबीजानां सामग्र्यादङ् सु.शा.२
कुरो यथा ।।३५।।
205. शुक्रासृगात्माशयकालसम्पद् यस्योपचारश्च हितैस्तथाऽत्रैः । गर्भश्च काले च च.शा. २
सुखी सुखं च सञ्जायते सम्परिपूर्णदेहः ।।६।।
206. शुक्रं तदस्य प्रवदन्ति धीरा यद्धीयते गर्भसमुद्भवाय । च.शा. २/४
वाय्यवाग्निभूम्यङ्गुणपादवत्तत् षड्भ्यो रसेभ्यः प्रभवत्तस्य ।।
207. रसाद्रक्तं ततो मांसं मांसान्मेदः प्रजायते । मेदसोऽस्थि ततो मज्जा मज्जाः शुक्रं सु.शा.१४
तु जायते ।।१०।।
208. स खलु त्रीणि त्रीणि कलासहस्राणि पञ्चादश च कला एकैकस्मिन् सु.सू.१४
धातवावतिष्ठते । एवं मासेन रसः शुक्रीभवति स्त्रीणां चार्तवम् ।।१४।।
अष्टादशसहस्राणि सङ्ख्या ह्यस्मिन् समुच्चये । कलानां नवतिः प्रोक्ता
स्वतन्त्रपरतन्त्रयोः ।।१५।।
209. स्फटिकाभं द्रवं स्निग्धं मधुरं मधुगन्धि च । शुक्रमिच्छन्ति केचित्तु सु.शा.२
तैलक्षौद्रनिभं तथा ।।१३।।
210. स्निग्धं घनं पिच्छिलं च मधुरं चाविदाहि च । रेतः शुद्धं विजानीयात् श्वेतं च.चि.३०/१४५
स्फटिकसंनिभम् ।।
211. बहलं मधुरं स्निग्धम् अविस्त्रं गुरु पिच्छिलम् । शुक्लं बहु च यत्शुक्रं फलवत् च.चि.२ पा.४/५०

तदसंशयम् ॥

212. शुक्रं सौम्यं द्रवं स्निग्धं गुरु स्फटिकाभं सुक्लं मधुगन्धि अविस्त्रं मधुरं पिच्छिलं बहु बहलं घृततैलक्षौद्रान्यतमवर्णं च भवति । एतद् गुणयुक्तमेव शुक्रं गर्भजननसमर्थम् इति वदन्ति । अ.सं.शा.१/९
213. शुक्रवहानां स्रोतसां वृषणौ मूलं शेफश्च । च.वि.५/१७
214. शुक्रवहे द्वे (स्रोतसी) तयोर्मूलं स्तनौ वृषणौ च । सु.शा.९/१२
215. सप्तमी शुक्रधरा नाम या सर्वप्राणिनां सर्वशरीरव्यापिनी । यथा पयसि सर्पिस्तु गूढश्चेक्षौ रसो यथा । शरीरेषु तथा शुक्रं नृणां विद्याद् भिषग्वरः ॥ २०-२१
द्व्यङ्गुले दक्षिणे पार्श्वे बस्तिद्वारस्य चाप्यधः । मूत्रस्रोतः पथाच्छुक्रं पुरुषस्य प्रवर्तते । । कृत्नदेहाश्रितं शुक्रं प्रसन्नमनसस्तथा । स्त्रीषु व्यायच्छतश्चापि हर्षत्तत् संप्रवर्तते ॥ २२-२३ सु.शा.४
216. परिमाणम् - अर्धाजलिः शुक्रस्य । च.शा.७/१४
217. गर्भोत्पादः (श्रेष्ठं कर्म शुक्रस्य) अ. ह्य. सू. ११
218. शुक्रं धैर्यं च्यवनं प्रीतिं देहबलं हर्षं बीजार्थं च ॥ सु.सू. १५/७
219. शुक्रं शुक्राश्मरीमतिप्रादुर्भावं च ॥ १९ ॥ सु. सू १५
220. शुक्रक्षये मेढ्रवृषणवेदनाऽशक्तिर्मेथुने चिराद्वा प्रसेकः, प्रसेके चाल्परक्तशुक्रदर्शनम् ॥ १३ ॥ सु. सू १५
221. अतिव्यवायाद्व्यायामादसात्म्यानां च सेवनात् । अकालेवाऽप्ययोनौ वा मैथुनं न च चच्छतः रुतिक्तकषायातिलवणाम्लोष्णसेवनात् । नारीणामरसज्ञानां गमनाज्जरया तथा ॥ १३६ ॥ च.चि ३०
चिन्ताशोकादविसम्भाच्छस्त्रक्षाराग्निविभ्रमात् । भयात्क्रोधादभीचाराद्व्याधिभिः कर्षितस्य च ॥ १३७ ॥
वेगाघातात् क्षताच्चापि धातूनां संप्रदूषणात् । दाषाः पृथक् समस्त वा प्रप्य रेतोवहाः सिराः ॥ १३८ ॥
शुक्रं संदूषयन्त्याशु तद्वक्ष्यामि विभागशः । १३९
222. शुक्रस्य दोषात्ते क्लैब्यमहर्षणम् । रोगि वा क्लीबमल्पायुर्विरुपं वा च.सू.२८

- प्रजायते ॥१८॥
 न चास्य जायते गर्भः पतति प्रस्रवत्यपि । शुक्रं हि दुष्टं सापत्यं सदारं बाधते
 नरम् ॥ १९ ॥
223. वात-पित्त-श्लेष्म-कुणप-ग्रन्थि-पूति-पूय-क्षीण-मूत्रपुरीषरेतसः प्रजोत्पादने न सु.शा.२/३
 समर्था भवन्ति ॥३॥
224. फेनिलं तनु रुक्षं च विवर्ण पूति पिच्छिलम् ॥१३९॥ च.चि. ३०
 अन्यधातूपसंसृष्टमवसादि तथाष्टमम् ॥१४०
225. ऋतौ भवति इति आर्तवम् ।
226. रक्तवर्णत्वात् रक्तसादृश्याच्च आर्तवं शोणितम् इति उच्यते ।
 रक्तम् असृक् लोहितम् इत्यादयोऽपि शोणितपर्यायाः सन्ति ।
227. तथा रक्तमेव च स्त्रीणां मासे मासे गर्भकोष्ठम् आप्राप्य त्र्यहं प्रवर्तमानम् अ.सं.शा.१/१०
 आर्तवमित्याहुः ।
228. बहिः प्रवर्तमानत्वं तस्य (अर्तवस्य) उपलक्षणम् । न तु आर्तवं यत् प्रवर्तते एव इन्दु टीका
 केवलं । ऋतौ भवति इति आर्तवम् । ऋतुस्तु निषिक्तस्य बीजस्य
 फलप्रसवानुगुणः कालः ।
229. आर्तववहे द्वे (स्रोतसी) तयोर्मूलं गर्भाशयः आर्तववाहिन्यश्च धमन्यः । सु.शा.९/१२
230. मासान्निषिच्छदाहार्ति पंचरात्रानुबंधि च । नैवातिबहु नात्यल्पं आर्तवं च.चि. ३०/२२५-२२६
 शुद्धमादिशेत् ॥ गुंजाफलसवर्णं च पद्मालक्तसंनिभम् । इन्द्रगोपमसंकाशम्
 आर्तवं शुद्धमादिशेत् ॥
231. शशासृक्प्रतिमं यत्तु यद्दालाक्षारसोपमम् । तदार्तवं प्रशंसन्ति यद्वासो न सु.शा.२
 विरञ्जयेत् ॥१९॥
232. सु. सू १५/९
233. आर्तवक्षये यथोचितकालादर्शनमल्पता वा योनिवेदना च ॥१६॥ सु.सू १५
234. आर्तवमङ्गमर्दमतिप्रवृत्तिं दौर्गन्ध्यं च ॥ २१ ॥ सु.सू.१५
235. शुक्रासृगात्माशयकालसम्पदृष्ट यस्योपचारश्च हितैस्तथाऽत्रैः । गर्भश्च काले च च.शा.२/६
 सुखी सुखं च संजायते संपरिपूर्णदेहः ॥६॥

236. यथा रोहितमत्स्यस्य मुखं भवति रूपतः। सु.शा.५
तत्संस्थानां तथारूपां गर्भशय्यां विदुर्बुधाः ॥५६॥
237. स्त्रीणां तु बस्तिपार्श्वगतो गर्भाशयः सन्निकृष्टः ,...॥३३॥ सु.चि. ७
238. ऋतुस्तु द्वादशरात्रं भवति दृष्टार्तवः। अदृष्टार्तवाऽप्यस्तीत्येके भाषन्ते ॥५॥ सु.शा.३/५
239. पुरुषस्यानुपहतरेतसः स्त्रियाश्चाप्रदुष्टयोनिशोणितगर्भाशयाया यदा भवति च.शा.३
संसर्गः ऋतुकाले, यदा चानयोस्तथायुक्ते संसर्गे
शुक्रशोणितसंसर्गमन्तगर्भाशयगतं जीवोऽवक्रामति सत्त्वसम्प्रयोगात् तदा
गर्भोऽभिनिर्वर्तते, स सात्म्यरसोपयोगादरोगोऽभिवर्धते
सम्यगुपचारैश्चोपचर्यमाणः, ततः प्राप्तकालः सर्वेन्द्रियोपपन्नः परिपूर्णशरीरो
बलवर्णसत्त्व संहननसम्पदुपेतः सुखेन जायते समुदयादेषां भावानां -
मातृजश्चायं गर्भः पितृजश्चात्मजश्च रसजश्च, अस्ति च खलु
सत्त्वमौपपादुकमिति होवाच भगवानात्रेयः ॥३॥
240. विशेषतस्तु गर्भिणी प्रथमद्वितीयतृतीयमासेषु मधुरशीतद्रवप्रायमाहारमुपसेवेत्, सु.शा.१०
विशेशतस्तु तृतीये षष्टिकौदनं पयसां भोजयेत्; चतुर्थे दध्ना पञ्चमे पयसा,
षष्ठे सपिषअ चेत्येके ॥३॥ सु.शा.१०/३
चतुर्थे पयोवनीतसंसृष्टमाहरयेज्जाङ्गलमांससहितं हृद्यमन्नं च भोजयेत् ,
पञ्चमे क्षीरसर्पिःसंसृष्टं षष्ठे श्वदंष्ट्रासिद्धस्य सर्पिषो मात्रां पाययेद् यवागूं वा ,
सप्तमे सर्पिःपृथक्पर्ण्यादिसिद्धम्, एवामाप्यायते गर्भः ॥४॥
अष्टमे बदरोदकेन बलाऽतिबला-शतपुष्पापलल-पयो-दधि-मस्तु-तैल-
लवण-मदनफल-मधु-घृत-मिश्रेणास्थापयेत्; पुराणपुरीषशुद्ध्यर्थमनुलोमनार्थं
च वयोः, ततः पयोमधुरकषायसिद्धेन (पयो-मधुकषायसिद्धेन पा)
तैलेनानुवासयेत्, अनुलोमे हि वायौ सुखं प्रसूयते निरुपद्रवा च भवति, अत
ऊर्ध्वं स्निग्धाभिर्यवागूभिर्जाङ्गलरसैश्चोपक्रमेदाप्रसवकालात्, एवमुपक्रान्ता
स्निग्धा बलवतीसुखमनुपद्रवा प्रसूयते ॥५॥
241. मद्यनित्या पिपासालुमल्पस्मृतिमनवस्थितचित्तं वा, गोधामांसप्राया च.शा.८/२१
शार्करिणमश्मरिणं शनैर्मेहिणं वा, वराहमांसप्रिया रक्ताक्षं

क्रथनमतिपरुषरोमाणं वा, मत्स्य मांसनित्या चिरनिमेषं स्तब्धाक्षं वा,
मधुरनित्या प्रमेहिणं मूकमतिस्थूलं वा, अम्लनित्या रक्तपित्तिनं त्वगक्षिरोगिणं
वा, लवणनित्या शीघ्रवलीपलितं खालित्यरोगिणं वा, कटुकनित्या
दुर्बलमल्पशुक्रमनपत्यं वा, तिक्तनित्या शोषिणमबलमनुपचितं वा,
कषायनित्या श्यावमानाहिनमुदावर्तिनं वा, यद्यच्च यस्य यस्य व्याधेर्निदानमुक्तं
तत्तदासेवमानाऽन्तर्वत्नी तन्निमित्तविकारबहुलमपत्यं जनयति। पितृजास्तु
शुक्रदोषा मातृजैरपचारैर्व्याख्याताः ।

242. स सर्व गुणवान् गर्भत्वमापन्नः प्रथमे मासि संमूर्च्छितः सर्वधातुकलुषोकृतः च.शा.४/९
खेटभूतो भवत्यविग्रहः सदसद्भूताङ्गावयवः॥
243. तत्र प्रथमे मासि कललं जायते॥ सु.शा.३/१८
244. फ्राणस्तु बीजं हि रक्तेन परिवेष्ट्यते॥ शुक्रादस्थ्यस्तितो मांसमुभाभ्यां का.सं.
सर्वाङ्गावयवस्तथा॥
245. द्वितीये मासि घनःसम्पदृष्टयते पिण्डः पेश्यार्कुं वा। तत्र घनः पुरुषः पेशी स्त्री च.शा.४/१०
अर्कुं नपुंसकम्॥
246. द्वितीये शीतोष्मानिलैरभिप्रपच्यमानानां महाभूतानां सङ्घातो घनः संजायते; सु.शा.३/१९
यदि पिण्डः पुमान्, स्त्री चेत् पेशी, नपुंसकं चेदर्बुदमपि॥
247. तृतीये मासि सर्वेन्द्रियाणि सव्राङ्गवयवाश्च यौगपद्येनाभिनिर्वर्तन्ते॥ च.शा.४/११
248. तृतीये हस्तपादशिरसां पञ्च पिण्डका निर्वर्तन्तेऽङ्गप्रत्यङ्गविभगश्च सूक्ष्मो सु.शा.३/२०
भवति।
249. चतुर्थे मासि स्थिरत्वमापद्यते गर्भः तस्मात्तदा गर्भिणी च.शा.४/२०
गुरुगात्रत्वनधिकमापद्यते...॥
250. चतुर्थे सर्वाङ्गप्रत्यङ्गविभागः प्रव्यक्ततरो भवति, सु.शा.३/२१
गर्भहृदयप्रव्यक्तिभावाच्चेतनाधातुरभिव्यक्तो भवति,..।
251. पञ्चमे मासि गर्भस्य मांसशोणितोपचयो भवत्यधिकमन्येभ्यो मासेभ्यः,...। च.शा.४/२१
252. पञ्चमे मनः प्रतिबुद्ध्यतरं भवति॥ सु.शा.३/२२
253. षष्ठे मासि गर्भस्य बलवर्णोपचयो भवत्यधिकन्येभ्यो मासेभ्यः। च.शा.४/२२

254. षष्ठे बुद्धिः। सु.शा.३/३६
255. सप्तमे मासि गर्भः सर्वैर्भावैराप्यायते ...। च.शा.४/२३
256. सप्तमे सर्वाङ्गप्रत्यङ्गविभागः प्रव्यक्ततरः ॥ सु.शा.३/३७
257. अष्टमेमासि गर्भश्च माता रसहारिणीभिः संवाहिनीभिर्मुहुर्मुहुरोजः परस्परत च.शा.४/२४
आददाते गर्भस्यासम्पूर्णत्वात्।तस्मात्तदा गर्भिणी मुहुर्मुहुमुदायुक्ता भवति
मुहुर्मुहुश्च म्लाना ...।
258. अष्टमेऽस्थिरोभवत्योजः...।। सु.शा.३/३८
259. एवं नानाविधानामेषां गर्भकराणां भवानां समुदायादभिनिर्वर्तते गर्भः , यथा च.शा.३
कूटागारं नानाद्रव्यसमुदायात् , यथा वा रथो नानारथाङ्गसमुदायात् ;
तस्मादेतदवोचाम - मातृजश्चायं गर्भः , पितृजश्च, आत्मजश्च , सात्मजश्च ,
रसजश्च, अस्ति स सत्त्वमौपादुकमपि ॥ १४ ॥
260. गर्भस्य चत्वारि चतुर्विधानि भूतानि मातापितृसम्भवानि । च.शा २
आहारजान्यात्मकृतानि चैव सर्वस्य सर्वाणि भवन्ति देहे ॥२६ ॥
तेषां विशेषाद् बलवन्ति यानि भवन्ति मातापितृकर्मजानि ।
तानि व्यवस्येत् सदृशत्वहेतुं सत्त्वं यथानूकमपि व्यवस्येत् ॥ २७ ॥
261. शुक्रशोणितसंयोगे यो भवेद्दोष उत्कटः।प्रकृतिर्जायते तेन तस्या मे लक्षणं सु.शा.४/६३
शृणु ॥६३ ॥ सुश्रुतसंहिता उल्हण
सप्तविधं प्रतिपाद्य तस्या उत्पत्तौ हेतुमाह,- शुक्रेत्यदि। यो भवेद्दोष उत्कटः टीका
इति स्वभावस्थितो न प्रकुपितः। द्विविधा ह्युत्कटा वातादयः,
प्रकृतावैकृताश्च;तत्र प्रकृताः सप्तविधायाःप्रकृतेर्हेतुभूताः
शरीरकैकजन्मानः,वैकृताश्च गर्भव्यसघातकाः।
गयी तु अन्यथैवाशङ्क्य समाधयति। यथा - ननु , सचवभावतः शुद्धं बीजं
कर्मणा वासमधातुं गर्भं निष्पादयति, अनिलादिदोषदुष्टं तु गर्भजननाय न
समर्थमिति शुक्रशोणित शुद्धावुक्तं तत् कथमुत्कटेन दोषेण प्रकृतिरिति ?
उच्यते- न हि सर्वमेव बीजं दूषितं किंतर्हि बीजावयवो दूषितः,न
चावयवगतदोषेण गर्भप्रतिबन्धो जात्यन्धमूकादेर्गर्भावयवस्य दर्शनात्; तस्मात्

अत्र य एवांशो बीजस्य दुष्टो भवति तत्कार्यस्यैव गर्भावयवस्य विकृतिरभावो भवति, यथा दृष्टारम्भके बीजभागे दुष्टे जात्यान्धो गर्भो भवति न तु गर्भ एव न भवति, तथा दोषाख्ये बीजभागे दुष्टे तत्कार्यस्यैव गर्भशरीरभागस्य समवायोरपेक्षया विकृतिः स्फुटितकरचरणादि लक्षणम् भवति न तु गर्भव्याघातः।दृष्टं बीजार्थकृत् बीजं तत्र प्रकृतिरुत्तम् - इति॥

262. तत्र प्रकृत्यादीन् भावाननुव्याख्यासामः।तद्यथा शुक्रशोणितप्रकृतिं, च.वि. ८/९५

कालगर्भाशयप्रकृतिमातुराहारविहारप्रकृतिं महाभूतविकारप्रकृतिं च गर्भशरीरमपेक्षते।एतानि हि येनयेन दोषेणाधिकेनैकेनानेकेन वा समनुबद्धयन्ते, तेन तेन दोषेण गर्भोऽनुबद्धयते; ततः सा सा दोषप्रकृतिरुच्यतेमनुष्याणां गर्भादिप्रवृत्ता। तस्माच्छेलेष्मलाः प्रकृत्या केचित्,पित्तलाः केचित्,वातलाः केचित्, संसृष्टाः केचित् समधातवः केचिद् भवन्ति॥९५॥

263. सप्त प्रकृतयो दोषैः पृथक् संसर्गेण साम्येन च भवन्ति॥३॥

अ.सं.शा.८/४

तत्र शुक्रार्तवगर्भाशयकालेषु मातुश्चाहारयोरेकाऽनेको वा यो दोषो भवत्याधिक्येन तेनामरणाद्विषवल्ल्यामिवोत्पाद्यमानस्य कृमेविषेण सविषकृमेरिव वृश्चिकादेराशीविषस्येव वा स्वविषेण प्रकृतिर्जायते॥४॥

तस्मात्तन्मयतया शुक्रार्तवयोर्देहस्य भावितत्वात्प्रकृतत्वाच्च तावता तेन दोषेण न विहन्यते। तद्गुणैरेव चास्य शरीरमुपस्क्रियते। ततश्च तद्गुणप्रतिपक्षैः सहसा न बाध्यते॥५॥ अ.सं.शा.८/४

तस्यां त्ववस्थायां विकृतिमिति दोषे उल्बणे नैव गर्भः सम्भवति। सम्भव एव वा विपद्यते विकृतो वा भवति॥६॥

तथा च केचिदाहुः - द्विविधा वातादयः प्रकृता वैकृताश्च। तत्र प्रकृताः सप्तविधायाः प्रकृतेर्हेतुभूताः शरीरैकजन्मानः। ते शरीरधारणाद्भातुसंज्ञाः दोषाख्यानां विकृतानां बीजभूतानां मुमूर्षोः स्वरुपाच्चलन्ति। सर्वेष्वपि च देहे सन्निहितेषु प्रकृतावुल्बणेन व्यपदेशः। वैकृतास्तु गर्भादभिनिःसृतस्याहाररसासम्भवन्तः प्रकृतेष्वेव रोहन्ति ते कालादिवशेन स्वप्रमाणवृद्धिक्षययोगाद्देहमनुगृह्णन्ति दूषयन्ति च॥७॥

264. तेषां मातृजानि मृदुनि अ.शा.५
त्वग्रक्तमांसमेदोमज्जनाभिहृदयामाशयगर्भाशययकृत्प्लीहक्लोमान्त्रगुदादीनि ।।
१४ ।।
265. मातृजश्चायं गर्भः। न हि मातृर्विना गर्भोत्पत्तिः स्यात् , न च जन्म च.शा.३/७
जरायुजानाम्। यानि खल्वस्य गर्भस्य मातृजानि, यानि चास्य मातृतः
संभवन्ति, तान्यनुव्याख्यास्यामः; तद्यथा - त्वक् च लोहितं च मांसं च मेदश्च
नाभिश्च हृदयं च क्लोम च यकृच्च प्लीहा च वृक्कौ च बस्तिश्च पुरीषाधानं
चामाशयश्च पक्वाशयश्चोत्तरगुदं चाधरगुदं च क्षुद्रान्त्रं च स्थूलान्त्रं च वपावहनं
चेति (मातृजानि) ।।६ ।।
266. मांस-शोणित-मेदो-मज्ज-हृन्नाभि -यकृत्-प्लीहान्त्र-गुदप्रभृतीनि मृदूनि
मातृजानि ।
267. पितृजानि स्थिराणि केशनखास्थिशुक्रसिरास्नाय्वादीनि ।।१५ ।। अ.शा.५
268. पितृजश्चायं गर्भः। नाहि पितृऋते गर्भोत्पत्तिः स्यात् , न च जन्म च.शा.३/७
जरायुजानाम्। यानि खल्वस्य गर्भस्य पितृजानि , यानि चास्य संभवन्ति ,
तान्यनुव्याख्यास्यामः ; तद्यथा -
केशश्मश्रुनखलोमदन्तास्थिसिरास्नायुधमन्यः शुक्रं चेति (पितृजानि) ।।७ ।।
269. तत्र गर्भस्य पितृज-मातृज-रसजात्मज सत्वज- सात्म्यजानि शरीरलक्षणानि
व्याख्यास्यामः । गर्भस्य , केश-श्मश्रु-लोमास्थि-नख-दन्त-सिरास्नायु धमनी
-रेतः प्रभृतीनि स्थिराणि पितृजानि ।
270. आत्मजानि तासु तासु योनिषूत्पत्तिर्मनश्चेतनेन्द्रियाणि प्राणापानौ अ.शा.५
धारणधर्मशीलतास्मृतिबुद्धीच्छाद्वेषप्रयत्नाहङ्कारसुखदुःखायुरात्मज्ञानानि
च ।।१६ ।।
271. यानि तु खल्वस्य गर्भस्यात्मजानि, यानि चास्यात्मतः संभवतः संभवन्ति , च.शा.३/७
तान्यनुव्याख्यास्यामः, तद्यथा - तासु तासु योनिषूत्पत्तिरायुरात्मानज्ञानं मन
इन्द्रियाणि प्राणापानौ प्रेरणं धारणमाकृतिस्वरवर्णविशेषाः सुखदुःखे इच्छाद्वेषौ
चेतना धृतिबुद्धिः स्मृतिरहङ्कारः प्रयत्नश्चेति(आत्मजानि) ।।१० ।।

272. इन्द्रियाणि ज्ञानं विज्ञानमायुः सुखं दुःखादिकं चात्मजानि ।
273. सात्म्यजान्यायुरारोग्यमनालस्यमलोलुपत्वमिन्द्रियप्रसादस्वरवर्णबीजौजःसम्पत् अ.शा.५
शस्तताः प्रहर्षभूयस्त्वं मेधाबलं च ॥१७॥
274. यानि खल्वस्यगर्भस्य सात्म्यजानि , यानि चास्य सात्म्यतःसंभवतः संभवन्ति
, तान्यनुव्याख्यास्यामः ; तद्यथा - आरोग्यमनालस्यमलोलुपत्वमिन्द्रियप्रसादः
स्वरवर्णबीजसंप्रहर्षभूयस्त्वं चेति(सात्म्यजानि) ॥१९॥
275. सत्वजान्युत्तरत्र वक्ष्यामः ।वीर्यमारोग्यं बलवर्णो मेधा च सात्म्यजानि ॥३९॥
276. रसजानि कृत्स्नस्य देहस्य सम्भवो वृत्तिवृद्धिस्तृप्तिरलौल्यं अ.शा.५
पुष्टिरुत्साहश्च ॥१८॥
277. यानि चास्य रसतः संभवतः संभवन्ति, तान्यनुव्याख्यास्यामः ; तद्यथा - च.शा.३/७
शरीरस्याभिनिर्वृत्तिरभिवृद्धिः प्राणानुबन्धस्तृप्तिः
पुष्टिरुत्साहश्चेति(रसजानि) ॥१२॥
278. शरीरोपचयोबलं वर्णः स्थितिर्हानिश्च रसजानि ।
279. शुद्धसत्वजानि शौचमास्तिकत्वं कृतज्ञता दाक्षिण्यं व्यवसायः शौर्यं गाम्भीर्यं अ.शा.५
बुद्धिर्मैधा स्मृतिःशुक्लधर्मरुचिर्भक्तिनभिष्वङ्गस्तमोगुणविपर्ययः ॥१९॥
राजसानि दुरुपचारता अनार्यत्वं शौर्यं मात्सर्यममितभाषित्वमहङ्कारो लोलुपत्वं
दम्भो मानः क्रोधो हर्षः कामश्च ॥२०॥
तामसान्यज्ञानं विषादः प्रमादो निद्राऽऽलस्यं क्षुत्तृष्णा शोको मात्सर्यं
विप्रतिपत्तिः पराभिसन्धानं सत्वगुणविपरीत्यं च ॥२१॥
280. येषामेव हि भावानां संपत् संजनयेन्नरम् । तेषामेव विपद्याधीन् विविधान् च.सू.२५
समुदीरयेत् ॥ २१॥
281. बीजात्मकर्माशयकालदोषैर्मातृस्तथाऽऽहारविहारदोषैः । कुर्वन्ति दोषा च.शा.२
विविधानि दुष्टाः संस्थानवर्णेन्द्रियवैकृतानि ॥२१॥
वर्षासु काष्ठश्मघनाम्बुवेगास्तरोः सरित्त्रोतसि संस्थितस्य । यथैव कुर्युर्विकृतिं
तथैव गर्भस्य कुक्षौ नियतस्य दोषाः ॥ ३०॥
282. यस्य यस्य ह्यङ्गावयवस्य बीजे बीजभाग उपतप्तो भवति , तस्य च.शा.३

- तस्याङ्गावयवस्य विकृतिरुपजायते, नोपजायते चानुपतापात् ;
तसादुभयोपपत्तिरप्यत्र। सर्वस्य चात्मजानीन्द्रियाणि , तेषां भावाभावहेतुर्देवं
तस्मान्नैकान्ततो जडादिभ्यो जाताः पितृसदृशरूपा भवन्ति ॥१७॥
283. यतस्तु कात्स्न्येनाविनश्यन् विकृतिमापद्यते, तदनुवयाख्यास्यामः - यदा च. शा. ४/३०
स्त्रिया दोषप्रकोपणोक्तान्यासेवमानाया दोषाः प्रकुपिताः शरीरमुपसर्पन्तः
शोणितगर्भाशयावुपपद्यन्ते, न च कात्स्न्येन शोणितगर्भाशयौ दूषयन्ति, तदेयं
गर्भं लभते स्त्र; तदा तस्य गर्भस्य मातृजानामवयवानामन्यतमोऽवयवो
विकृतिमापद्यत एकोऽथवाऽनेके, यस्य यस्य ह्यवयवस्य बीजे बीजभागे वा
दोषाः प्रकोपमापद्यन्ते, तं तमवयवं विकृतिराविशति।
284. American Cancer Society
285. Dr. Tommi Kainu, former researcher, NHGRI - *Proc. Natl. Acad. Sci. USA, Vol. 97, Issue 17, 9603-9608, August 15, 2000*
286. Histological features of breast cancer in women carrying mutations in the susceptibility genes BRCA1 and BRCA2 with controls unselected for family history, *Lancet. 1997 May 24;349(9064):1505-10.* PMID:9167459
287. रजःप्रसेक न्नारीणां मासि मासि विशुद्धयति । सर्वं शरीरं दोषाश्च न सु.नि.६/३ टीका
प्रमेहन्त्यः स्त्रियः।
288. एको हेतुरनेकस्य तथैकस्यैक एव हि । व्याधेरेकस्य चानेको बहूनां बहवोऽपि च. नि.८/२४
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294. तदतिस्थौल्यमतिसंपूरणाद् गुरुमधुरशीत स्निग्धोपयो - च.सू.२९
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ग्राम्याहारादम्ललवणकटुकक्षारशुष्कशाकमांसतिलपललपिष्टान्नभोजनां
विरुढनवशूकशमीधान्यविरुद्धासात्म्यरुक्षक्षाराभिष्यन्दिभजेजिनां
क्लिन्नपूतिपर्युषितभोजनां
विषमाध्यशनप्रयाणां दिवास्वप्नस्त्रीमद्यनित्यानां
विषमातिमात्रव्यायामसंक्षोभितशरीराणां
भयक्रोधशोकलोभमोहायासबहुलानाम्; अतो निमित्तं हि शिथिलीभवन्ति
मांसानि, विमुच्यन्ते सन्धयः,
विदह्यते रक्तं, विष्यन्दते चानाल्पं मेदः, न सन्धीयतेऽस्थिषु मज्जा, शुक्रं न

प्रवर्तते, क्षयमुपैत्योजः,

स एवं भूतो ग्लायति, सीदति, निद्रातन्दालास्यसमन्वितो निरुत्साहः

श्वसति, असमर्थश्चेष्टानां शारीरमानसीनां,

नष्टस्मृतिबुद्धीच्छायो रोगाणामधिष्ठानभूतो न सर्वमायुरवाप्नोति। तस्मादेतान्

दोषानवेक्ष्यमाणः सर्वान् यथोक्तानहितानपास्याहार

-विहारान् रसायनानि प्रयोक्तुमर्हतीत्युक्त्वा भगवान् पुनर्वसुरात्रेय उवाच- ॥

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303. विविधमशितं पीतं लीढं खअदितं जन्तोर्हितमन्तरग्निसन्धुक्षितबलेन च.सू.२८/३
यथास्वेनोष्मणा सम्यग्विपच्यमानं

- कालवदनवस्थितसर्वधातुपाकमनुपहतसर्वधातूष्ममारुतस्रोतः केवलं
शरीरमुपचयबलवर्णसुखायुषा योजयति
शरीरधातूनूर्जयति च । धातवो हि धात्वाहाराः प्रकृतिमनुवर्तन्ते ॥३॥
304. तेषां तु मलप्रसादाख्यानां धातूनां स्रोतांस्ययनमुखानि । यथाविभागेन च.सू.२८/५
यथास्वं धातूनापूरयन्ति ।
एवमिदं शरीरमशितपीतलीढखादितप्रभवाश्चस्मिञ् शरीरे व्याधयो भवन्ति ।
हितहितोपयोगविशेषास्त्वत्र शुभाशुभविशेषकरा भवन्तीति ॥
305. जायन्ते हेतुवैषम्याद्विषमा देहधातवः । हेतुसाम्याद् समास्तेषां स्वभावोपरमः च.सू.१६/२७
सदा ॥
306. त एव वातपित्तश्लेष्माणः स्थानविशेषे प्रकुपिताव्याधिविशेषानभि - च.सू.२८/७
निर्वतयन्त्यग्निवेशः ॥
307. कुपितानां हि दाषाणां शरीरे परिधावताम् । यत्र सङ्गः सु.सू.२५/१९
खवैगुण्याद्व्याधिस्तत्रोपजायते ॥
308. व्याधेरुपरि यो व्याधिर्भवत्युत्तरकालजः । उपक्रमाविरोधि च स उपद्रव
उच्यते ॥
309. आसन्नविवृतास्यत्वात्स्रोतसां रसवाहिनाम् ॥७२॥ अ.सं.नि.२
आशु सर्वस्य वपुषो व्याप्तिर्दोषेण जायते ।
310. भूमौ स्थितं जलैः सिक्तं कालमेव प्रतीक्षते ॥६७॥ अ.सं.नि.२
कुप्यत्याप्तबलं भूयः काले दोषविषं तथा ।
311. सूक्ष्मासूक्ष्मतरास्येषु दूरदूरतरेषु च ॥६३॥ अ.सं.२
दोषो रक्तादिमार्गेषु शनैरल्पश्चिरेण यत् । याति देहं च नाशेषं भूयिष्ठं भेषजेऽपि
च ॥६४॥
312. यथोत्तरं मन्दगतिर्मन्दशक्तिर्यथा यथा । कालेनाप्नोति सदृशान्सरसादींस्तथा अ.सं.नि.२
॥६६॥

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PATIENT CONSENT FORM

सम्मतिपत्र

रुग्ण नाम :

लिंग:

वय:

धर्म:

पत्ता :

दूरध्वनी क्रमांक:

व्यवसाय :

व्याधी निदान :

या अध्ययनादरम्यान आपणास आहारसवयी व कॅन्सर या रोगासंबंधातील आनुवंशिकता या संदर्भात संक्षिप्त प्रश्नावली विचारण्यात येईल. आपणास लिंग, वय इत्यादी माहिती विचारण्यात येईल. यासाठी अंदाजे २ तासांचा सहभाग अपेक्षित आहे.

या शोध निबंध अध्ययनात सहभाग घेतल्यामुळे आपल्यास कोणत्याही स्वरूपाची हानी पोहोचणार नाही.

आपल्या सहभागाविषयक सर्व माहिती पूर्णतः गोपनीय ठेवण्यात येईल. या अध्ययनातील निष्कर्षाची शोधनिबंधअहवालात लेखी स्वरूपात नोंद केली जाईल. तसाच सादरीकरण समयी हे निष्कर्ष मौखिकस्वरूपात मांडले जातील.

या शोध निबंधील माहिती , आपली वैयक्तिकता उघड करेल अशाप्रकारे प्रसिद्ध केली जाणार नाही. आपला सहभाग कोणत्याही वाळी कोणत्याही कारणासिवाय आपल्याला काढून घेता येईल.

वरील सम्मतीपत्र वाचून व त्याचा अर्थ समजून मी या प्रकल्पात सहभागी होऊ इच्छिते/बाहेर पडू शकते. माझीया शोधनिबंध अध्ययनात सहभागी होण्यास सम्मति आहे.

सहभागी रुग्ण स्वाक्षरी :

संशोधक वैद्य स्वाक्षरी :

दिनांक :

PATIENT CONSENT FORM

Consent Form for Research study

Name :

Sex :

Age :

Religion:

Address :

Tel.No :

Religion:

Occupation :

Diagnosis :

During this study, you will be asked to complete a number of brief questionnaires concerning your daily routine detailed information regarding your dietary habits in particular. Also your heredity factors about this disease. You will also be asked for some demographic information (gender, age, etc). Your participation will require approximately 2 hours of your time.

There are no known harms associated with your participation in this research. All records of participation will be kept strictly confidential, The results from this study will be reported in a written research report and an oral report during a class presentation. Information about the project will not be made public in any way that identifies individual participants.

Participation is completely voluntary. It may be discontinued at any time for any reason without explanation and without penalty.

I have read the above form, understand the information read, understand that I can ask questions or withdraw at any time. I consent to participate in this research study.

Participant's signature

Investigator's signature

Date

TILAK MAHARASHTRA VIDYAPEETH

Centre

Bharatiya Sanskriti Darshan Trust's Ayurved Mahavidyalaya, Wagholi, Pune

Title: To Study the role of Aahar hetu (Dietary Factors) and Aanuvanshikta (Heredity) as causative factors in Dushta Stanarbuda (Breast Cancer)

Name of the Student: Vaidya (Mrs).Swapna Kulkarni

Name of the Guide: Dr.S.P.Sardeshmukh

Ayurvediya Parangat, Ph.D (Ayurved)

CASE RECORD FORM

Name of the Patient:

Address:

Occupation:

Age:

Age during Diagnosis:

Diagnosis :

Date of Original Diagnosis:

Histopathology Report:

Stage :

Grade :

Metastasis :

Date of finding :

Previous Conventional Treatment taken :

Surgery Details

Place/ Name of Doctor

Date

Chemotherapy Details:

CH Cycles:

Place/ Name of Doctor

Drugs advised /taken

Dosage

Date

Radiotherapy Details :

Site

Strength

Fraction

Duration

Place/ Name of Doctor

Physical Examination:

Pulse : / minute

B. P : / mm of Hg

Weight - Kg

Breast Examination :

P/A Examination :

Mutra Parikshana :

Mala Parikshana :

Jivha Parikshana :

Shabda Parikshana:

Sparsha Parikshana:

Aakruti Parikshana:

Satva Pariksha :

आर्तववह व स्तन्यवह स्रोतस

रजःप्रवृत्ति इतिहास :

प्रथम रजोदर्शनसमयी वय :

रजःप्रवृत्ति : नियमित / अनियमित

दिवस / दिवसांनी

कपड्यांवर पडलेले डाग धुतले जातात / जात नाहीत

ग्रंथी : नाही / अल्प / मध्यम / अधिक

रजःप्रवृत्ती - कष्टार्तव / अल्पार्तव / अत्यार्तव

रजःप्रवृत्ती दरम्यान लक्षणे : उदरशूल / पादशूल / अंगगौरव / चिडचिडेपणा

इतर

रजःप्रवृत्तीसाठी चिकित्सा :

रजोनिवृत्ती : वय

रजोनिवृत्तापूर्वी लक्षणे :

रजोनिवृत्तापूर्वी औषधोपचार विशेष :

श्वेतस्राव : होय / नाही

श्वेतस्राव : श्वेत / पिच्छिल / पीत / हरीत

विवाहसमयी वय :

प्रथम प्रसव समयी वय:

प्रसव : प्राकृत प्रसव / गर्भशंकू / वेमदेवीय प्रसव

अपत्य संख्या :

गर्भस्राव / गर्भपात

गर्भधारणार्थ चिकित्सा :

गर्भधारणार्थ काळात व्याधी :

गर्भधारणार्थ काळात चिकित्सा :

गर्भनिरोधक साधनांचा वापर:

प्रकार :

काळ:

गर्भनिरोधक साधनांचा वापराने त्रास:

स्तन स्वरूप : प्राकृत / विकृत

विकृती स्वरूप :

रजःप्रवृत्ती दरम्यान स्तन काठिण्य / स्तनगौरव / ग्रंथी प्रतिलिती

स्तन्य पान केले : होय / नाही

किती काळ :

स्तन्य पान : वाम / दक्षिण / उभय

स्तन्य स्वरूप : प्राकृत / अल्प / अधिक / अभाव

स्तन्य पान कालावधीत स्तनकाठिण्य / स्तनग्रंथी / स्तनविद्रधी

स्तनप्रदेशी आघात : होय / नाही

आघात विशेष :

आहार प्रश्नावली

आहार नियम

- भूक लागते / लागत नाही / कधी चांगली कधी नाही
 - मानसिक ताणतणावाचा भूकेवर परिणाम -
 - जेवणाच्या वेळा -पूर्वी - नियमित / अनियमित
 - सध्या - नियमित / अनियमित
 - जेवण : भूक लागली म्हणून / वेळ झाली म्हणून
 - क्षुधा / तृष्णा यांचा अवरोध / उदीरण करण्याची सवय आहे का ?
 - नाश्ता : सकाळी - वेळ : वाजता , प्रमुख पदार्थ
 - दुपारी - वेळ : वाजता , प्रमुख पदार्थ
 - जेवण गरम करून खाण्याची सवय आहे का ?
 - अ .ताजे गरम-गरम अन्न खाण्याची सवय
 - ब . फ्रीजमध्ये ठेवलेले सकाळचे जेवण गरम करून खाण्याची सवय
 - क. सकाळचे बाहेरच ठेवलेले जेवण गरम करून खाण्याची सवय
 - अन्न गरम ठेवण्याची पद्धत: गॅस / मायक्रोवेव्ह /कॅसरॉल
 - गरम केले जाणारे अन्न : भात /भाजी /आमटी / पोळ्या / मांसाहार
 - इतर :
 - जेवणेमध्ये तेल / तूप /लोणी / दूध यांचा वापर कितपत ?
 - मात्रा :
 - जेवणाची मात्रा :
 - आवडीचे जेवण असल्यास अतिमात्रेत सेवन केले जाते का ?
 - नक्त भोजन /एकभुक्त राहण्याची सवय आहे का ?
 - उपवास करण्याची सवय आहे का ?
 - किती वेळा ? उपवासाचे कोणते पदार्थ खाता ?
-

-
- दोन पूर्ण अन्न सेवनकालात किती तासांचे अंतर असते ? – (Full meal)
३तासापेक्षा कमी / ३-४ तास / ५ तासापेक्षा जास्त
 - वरचेवर अन्न सेवन करण्याची सवय आहे का ?
 - जेवण करतेवेळी एकट्याने / सर्वासोबत जेवण घेतले जाते का ?
 - जेवताना आजूबाजूचे वातावरण प्रसन्न, खेळीमेळीचे, तणावरहित असते का ?
 - भोजनाची गती : अति द्रूत / मध्यम गती / अतिविलंबित
 - टी.व्ही पहात / हातात वर्तमानपत्र धरून / गप्पा मारत / मोठ्याने हसत / वाद विवाद करत जेवण्याची सवय आहे का ?
 - भाजनोत्तर धूम्रपानाची सवय :
 - प्रकृती अस्वास्थ्य असूनही अपथ्यकर भोजन करण्याची सवय आहे का ?
 - जेवण / पाणी पिण्यासाठी पुढील पैकी कुठले पात्र वापरले जाते ?
 - भोजन बनविण्यासाठी भांडी-अॅल्युमिनियम / स्टील / प्लॅस्टिक / काचेचे पात्र / निर्लेप
 - भोजन करण्यासाठी भांडी - अॅल्युमिनियम / स्टील / प्लॅस्टिक / काचेचे पात्र /
मेलामाइन / बोन चायनाचांदी
 - पाणी साठवणी/ पिण्यासाठी पात्र- अॅल्युमिनियम / स्टील / तांबे / पितळ / प्लॅस्टिक / काचेचे पात्र / चांदी
 - अन्न पदार्थ साठवण्यासाठी पात्र -
 - शूक वर्ग

तुमच्या आहारात गहू, तांदुळ, ज्वारी, बाजरी, मका, वरी यांचा समावेश असतो का ?

किती वेळा - २ वेळा/ दिवस , १ वेळा / दिवस, ३/७ दिवस , ५/७ दिवस , १/७ दिवस

प्रमाण - १-२ पोळ्या , ३-४ पोळ्या , ४ पेक्षा अधिक

	नाव	कृतान्न	वारंवारता	प्रमाण
१	गहू	फुलका		
		पोळी		
		परोठा		
		पुरी		
		खाकरा		
		धिरडं		
		रोटी		
	गहू	शिरा		
		उपमा		
		नूडल्स		
		शेवया		
	मैदा	न्नान		
		भटुरा		
		पुरी		
		नूडल्स		
	तांदूळ	पेज		
		मऊ भात		
		साधा भात		
	नाव	कृतान्न	वारंवारता	प्रमाण
	तांदूळ	बिर्याणी		
		पुलाव		
		उकड		
		भाकरी		
		तांदुळाची खीर		

	नाव	कृतान्न	वारंवारता	प्रमाण
	ज्वारी	भाकरी		
		उकड		
	बाजरी	भाकरी / रोटी		
	मका	रोटी		
		उकडून		
		भाजून		
		पॅटिस		
	वरी	खिचडी		
		भात		

• शमी -

तुमच्या आहारात कडधान्य / डाळी यांचा समावेश असतो का ?

किती वेळा - २ वेळा/ दिवस , १ वेळा / दिवस, ३/७ दिवस , ५/७ दिवस , १/७ दिवस

	नाव	कृतान्न	वारंवारता	प्रमाण
	मुद्ग	कच्चे(मोड आलेले)		
		अर्धवट शिजलेले		
		उकडून		
		उसळ		
		सूप		
	डाळ	वरण		
		आमटी		
		सूप		
		भाजीमधे		
		डोसा		
		खीर		

	नाव	कृतान्न	वारंवारता	प्रमाण
		लाडू		
		खिचडी		
	मसूर	उसळ		
	डाळ	वरण		
		आमटी		
		सूप		
		डोसा		
	उडीद	वरण		
	नाव	कृतान्न	वारंवारता	प्रमाण
	उडीद	आमटी		
		सूप		
		इतर		
	उडीद डाळ	भाजीमधे		
		वडे		
		इतर		
	तूर	सूप		
		वरण		
		आमटी		
		पुरण		
		इतर		
	तीळ	कच्चे		
		भाजीमधे		
		चटणी		
		लाडू		
	चणक	कच्चे		

	नाव	कृतान्न	वारंवारता	प्रमाण
		मोड आलेले		
		उसळ		
		सूप		
	डाळ	वरण		
		आमटी		
		सूप		
	नाव	कृतान्न	वारंवारता	प्रमाण
		भाजीमधे		
		धिरडे		
		खीर		
	बेसन	लाडू		
		भजी		
		वडे		
		पिठले		
		इतर		
	कुळीथ	उसळ		
		कढण		
		पिठी		
	मटकी	कच्चे		
		मोड आलेले		
		उसळ		
		सूप		
	डाळ	आमटी		
		कचोरी		
	राजमा	उसळ		

	नाव	कृतान्न	वारंवारता	प्रमाण
		इतर		
	छोले	नुसते शिजवून		
		उसळ		
		इतर		

• मांस वर्ग-

मांसाहार आठवड्यातून किती वेळा केला जातो ?

किती वेळा - २ वेळा/ दिवस , १ वेळा / दिवस, ३/७ दिवस , ५/७ दिवस , १/७ दिवस

प्रमाण - १/२वाटी, १वाटी, २वाटी, अधिक

पदार्थ कृति - कालवण / मसाला / तळून / तंदुरी / भाजून / उकडून / सॉसेज / सलामी

	नाव	कृतान्न	वारंवारता	प्रमाण
	मटण	सूप		
		कालवण/ मसाला		
		तळून		
		तंदुरी		
		इतर		
	चिकन	सूप		
		कालवण/ मसाला		
		तळून		
		तंदुरी		
		इतर		
	वराह मांस (पोर्क)	तळून		
		सॉसेज		
		सलामी		
		इतर		

	नाव	कृतान्न	वारंवारता	प्रमाण
	गोमांस	तळून		
		सॉसेज		
		सलामी		
	नाव	कृतान्न	वारंवारता	प्रमाण
	अंड	कच्चे		
		अर्धवट शिजवलेले		
		हाफ फ्राय		
		ऑमलेट		
		स्कॅम्बल्ड एग		
		भुर्जी		
		करी		
		बिर्याणी		
		उकडलेले		
		इतर		

मत्स्य - ताजे / सुके

गोडयांपाण्यातील / समुद्रातील

मत्स्य प्रकार -

पदार्थ कृति - कालवण / मसाला / तळून / तंदुरी / भाजून / उकडून / सूप

प्रकार - ताजा / फ्रोजन / शिजवून फ्रिजमध्ये ठेवलेला पुनश्च गरम करून

किती वेळा - २ वेळा / दिवस , १ वेळा / दिवस , ३/७ दिवस , ५/७ दिवस , १/७ दिवस

प्रमाण - १/२वाटी, १वाटी, २वाटी, अधिक

- शाक -

तुमच्या आहारात भाज्यांचा समावेश असतो का ?

पदार्थ - कच्ची भाजी / फोडणी देऊन / डाळीमध्ये / भजी / परोठा

किती वेळा - २ वेळा/ दिवस , १ वेळा / दिवस, ३/७ दिवस , ५/७ दिवस , १/७ दिवस

प्रमाण - १/२वाटी, १वाटी, २वाटी, अधिक

	नाव	कृतान्न	वारंवारता	प्रमाण
	अळूकंद			
	काकडी			
	कमळगट्टा			
	बीटरूट			
	रताळे			
	भटाटा			
	सूरण			
	णटर			
	तोंडले			
	भोपळी मिरची			
	केळफूल			
	कच्चा फणसं			
	लाल भोपळा			
	दोडकं			
	पडवळ			
	कारले			
	दुधी			
	वांगे			
	नाव	कृतान्न	वारंवारता	प्रमाण
	गवार			
	भेंडी			

	नाव	कृतान्न	वारंवारता	प्रमाण
	कॉलीफ्लॉवर			
	अळू			
	चाकवत			
	मेथी			
	लाल माठ			
	पातीचा कांदा			
	शेपू			
	सर्षप			
	मायाळू			
	पालक			
	अंबाडी			
	कोबी			

इतर अनुक्त :

- फळं -

तुमच्या आहारात फळांचा समावेश असतो का ?

प्रकार - ताजी फळे / फ्रिजमधील

पदार्थ - ताजे फळ / फळांचा रस / सर्व संमिश्र फळे / रायते

किती वेळा - २ वेळा / दिवस , १ वेळा / दिवस , ३/७ दिवस , ५/७ दिवस , १/७ दिवस

प्रमाण - १/२वाटी, १वाटी, २वाटी, अधिक

	नाव	कृतान्न	वारंवारता	प्रमाण
	मनुका			
	खजुर			
	अंजीर			
	ताडफळ			

	नाव	कृतान्न	वारंवारता	प्रमाण
	नारळ			
	रासबेरी			
	नासपती			
	कवठ			
	बेल			
	केरी			
	आंबा			
	भोर			
	जांभूळ			
	केळ			
	काकडी			
	चिंच			
	डाळींब			
	मोसंब			
	संत्र			
	फालसा			
	पपई			
	चिकू			
	स्ट्रॉबेरी			

इतर अनुक्त :

- हरितक -

तुमच्या आहारीय पदार्थात चवीसाठी खालील पदार्थांचा समावेश होतो का ?

स्वरूप - चटणी , सॅलेड , ठेचा , फक्त चवीपुरते

किती वेळा - २ वेळा/ दिवस , १ वेळा / दिवस, ३/७ दिवस , ५/७ दिवस , १/७ दिवस

प्रमाण - १/२वाटी, १वाटी, २वाटीपेक्षा अधिक

	नाव	कृतान्न	वारंवारता	प्रमाण
	आले			
	लसूण			
	ओवा			
	धने			
	कांदा			
	तुलसी			
	पुदिना			
	बडीशेप			
	मोहरी			
	बाल मुळा			
	घाजर			

इतर अनुक्तः

- मद्य -

प्रमाण -

प्रकार -

काल -

कालावधी -

- जल

तुम्ही दिवसभरात किती पाणी पिता ?

प्रमाण -

तहान लागते म्हणून / सवय म्हणून

प्रकार - साधे पाणी/ विहीरीचे पाणी / नदीचे पाणी / झऱ्याचे पाणी/ मिनरल वॉटर / टॅंकरचे पाणी

कालावधी

पाणी गाळून पिण्यात येते का ?

कोणत्या प्रकारे - फडक्याने गाळून , तुरटीने , कॅन्डल फिल्टर , अँक्वागार्ड , उकळून

केव्हापासून-

पिण्यासाठी वापरण्यात येणारे पाणी - साधे , गरम , उकळून गार केलेले , फ्रिजचे पाणी ,

अतिथंड पाणी , बर्फ घालून पाणी

पाणी पिण्याची सवय - सकाळी उठल्याबरोबर - होय / नाही प्रमाण -
जेवणापूर्वी / जेवणामधे / जेवणानंतर / झोपण्यापूर्वी

प्रमाण -

- दूध -

किती वेळा - २ वेळा/ दिवस , १ वेळा / दिवस, ३/७ दिवस , ५/७ दिवस , १/७ दिवस

काळ : - सकाळ / दुपार/ संध्याकाळ / रात्र

प्रमाण -

प्रकार - गाईचे दूध , म्हशीचे दूध , शेळीचे दूध , बकरीचे दूध

नुसते दूध / साखर घालून / Flavoured Bournvita इ. घालून

ताजे / प्लॅस्टिक पिशवीमधील / टेट्रा पॅक / स्कीम मिल्क (दूधाची पावडर)

दूधापासून बनविलेले पदार्थ-

घरी बनवून / तयार पदार्थ

प्रमाण :

वारंवारता :

- दही

तुमच्या आहारात दह्याचा समावेश असतो का ?

प्रमाण :

वारंवारता :

प्रकार - गाईच्या दुधापासून , म्हशीच्या दुधापासून , शेळीच्या दुधापासून , बकरीच्या दुधापासून

नुसते दही / साखर घालून / Flavoured / दुपारच्या जेवणानंतर / रात्रीच्या जेवणानंतर

घरी बनवून / तयार दही

गोड-अधमुरं दही / थोडे आंबट / अति आंबट

काळ : - सकाळ / दुपार/ संध्याकाळ / रात्र

ऋतु-

प्रमाण –

- Yoghurt

प्रमाण :

वारंवारता :

- ताक -

तुमच्या आहारात ताकाचा समावेश असतो का ?

प्रकार - गाईच्या दुधापासून , म्हशीच्या दुधापासून , शेळीच्या दुधापासून , बकरीच्या दुधापासून

नुसते ताक / साखर घालून / मीठ घालून / मसाला घालून / दुपारच्या जेवणानंतर / रात्रीच्या जेवणानंतर

घरी बनवून / तयार ताक

गोड-ताजे ताक / थोडे आंबट / अति आंबट

लस्सी / छास

काळ : - सकाळ /दुपार/ संध्याकाळ / रात्र

ऋतु-

प्रमाण -

- लोणी

तुमच्या आहारात लोण्याचा समावेश असतो का ?

प्रमाण :

वारंवारता :

साधे लोणी / साखर घालून / मीठ घातलेले / मसाला घालून / नाशत्यासह /दुपारच्या जेवणासह /रात्रीच्या

जेवणासह

घरी बनवून / तयार लोणी

गोड-ताजे लोणी/ थोडे आंबट

काळ : - सकाळ /दुपार/ संध्याकाळ / रात्र

ऋतु-

प्रमाण –

- Salted Butter

प्रमाण :

वारंवारता :

- तूप
-

तुमच्या आहारात तूपाचा समावेश असतो का ?

प्रमाण :

वारंवारता :

साधे लोणी / साखर घालून / नाशत्यासह / दुपारच्या जेवणासह / रात्रीच्या जेवणासह

घरी बनवून / तयार तूप

काळ : - सकाळ / दुपार / संध्याकाळ / रात्र

ऋतु-

प्रमाण -

- पनीर

तुमच्या आहारात पनीरचा समावेश असतो का ?

प्रमाण :

वारंवारता :

घरी बनवून / तयार

पदार्थ : नुसते पनीर / तळून / भाज्यांसह / गोड पदार्थ

काळ : - सकाळ / दुपार / संध्याकाळ / रात्र

ऋतु-

पनीरपासून बनविलेले गोड पदार्थ:

प्रकार:

प्रमाण :

वारंवारता :

- चीझ

तुमच्या आहारात चीझचा समावेश असतो का ?

प्रमाण :

वारंवारता :

प्रकार:

पदार्थ : नुसते चीझ / तळून - पकोडे / भाज्यांसह / गोड पदार्थ

काळ : - सकाळ / दुपार / संध्याकाळ / रात्र

ऋतु-

- इक्षु

ऊसाचा वापर : - ऊसाचा रस

वारंवारता :

प्रमाण :

नुसता ऊस

वारंवारता :

प्रमाण :

- साखर

वारंवारता :

प्रमाण :

गोड पदार्थ प्रकार :

वारंवारता :

भोज्य पदार्थामधे :

चहामधे :

- गूळ

वारंवारता :

प्रमाण :

गोड पदार्थ प्रकार :

वारंवारता :

भोज्य पदार्थामधे :

- मधाचा वापर

प्रकार:

नुसतं मध / आहारीय पदार्थात / गरम पाण्यासह

वारंवारता :

प्रमाण :

आहारोपयोगी वर्ग:

- तेल

तुमच्या आहारात तेलाचा समावेश असतो का ?

वारंवारता :

प्रमाण :

प्रकार : पाम / शेंगदाणा / खोबरेल तेल / सूर्यफूल / करडई / कॉर्न / राईस ब्रान / राई

कालावधी:

वापरण्याची पद्धत: फोडणीपुरते - प्रमाण :

तळणासाठी - प्रमाण :

- मीठ
-

तुमच्या आहारात मीठाचे प्रमाण किती ?

	प्रकार	वारंवारता	प्रमाण
	खारेदाणे		
	खारेचणे		
	खारेकाजू		
	तळलेले दाणे		
	प्रकार	वारंवारता	प्रमाण
	पापड		
	प्रकार	वारंवारता	प्रमाण
	कुरडई		
	लोणचं		
	फरसाण		
	वेफर्स		
	चिप्स		

इतर अनुक्त :

- गरम मसाल्याचे पदार्थ

उदा.:- हिंग / जीरे / काळी मिरी / धने / लवंग / वेलची / दालचिनी / जायफळ

यातील वापरल जाणारे पदार्थ -

वारंवारता :

प्रमाण :

- शीत पेये

शीत पेये / सोडा यांचा समावेश किती ?

अति थंड / अल्प शीत

प्रकार:

वारंवारता :

प्रमाण :

- बेकरी पदार्थ

तुमच्या आहारात बेकरी पदार्थांचा समावेश असतो का ?

प्रकार	ब्रेड :	प्रमाण :	वारंवारता :
	टोस्ट:	प्रमाण :	वारंवारता :
	खारी:	प्रमाण :	वारंवारता :
	मफीन्स:	प्रमाण :	वारंवारता :
	पेस्टरी:	प्रमाण :	वारंवारता :
	खारी बिस्कटे:	प्रमाण :	वारंवारता :
	गोड बिस्कटे:	प्रमाण :	वारंवारता :
	पॅटिस :	प्रमाण :	वारंवारता :

- आंबविलेल्या पदार्थ

तुमच्या आहारात आंबविलेल्या पदार्थांचा समावेश असतो का ?

प्रकार	: इडली:	प्रमाण :	वारंवारता :
	डोसा:	प्रमाण :	वारंवारता :
	उत्तपा:	प्रमाण :	वारंवारता :
	मेदुवडा:	प्रमाण :	वारंवारता :
	ढोकळा:	प्रमाण :	वारंवारता :

- तुमच्या आहारात खालील पदार्थांचा समावेश असतो का ?

केळे -दूध	प्रमाण :	वारंवारता :
फ्रूटसॅलड	प्रमाण :	वारंवारता :
मिल्क शेक	प्रमाण :	वारंवारता :
केळे-दही	प्रमाण :	वारंवारता :
अननस -दही	प्रमाण :	वारंवारता :
दूध -दही भात	प्रमाण :	वारंवारता :

दूध -ताक भात	प्रमाण :	वारंवारता :
दही - भात मीठ	प्रमाण :	वारंवारता :
दूध -मांसाहार	प्रमाण :	वारंवारता :
दही-मांसाहार	प्रमाण :	वारंवारता :
चहा-चपाती	प्रमाण :	वारंवारता :
चहा-खारी	प्रमाण :	वारंवारता :

चहाच्या आधी /नंतर पाणी प्रमाण : वारंवारता :

इतर अनुक्त :

- शिल्ले पदार्थ

तुमच्या आहारात शिल्ले पदार्थ येतात का ?

प्रमाण :

वारंवारता :

प्रकार :

तुमच्या आहारात फ्रोजन (बर्फातील) पदार्थ येतात का ?

प्रकार : कच्चे / शिजवलेले

शाकाहार / मांसाहार

प्रमाण : वारंवारता :

- प्रिझरवेटिवयुक्त पदार्थ

तुमच्या आहारात प्रिझरवेटिवयुक्त पदार्थ येतात का ?

प्रकार : जॅम / जेली / सॉस / कृत्रिम शीत पेये

इतर अनुक्त :

प्रमाण : वारंवारता :

- तुमच्या आहारात झटपट बनविता येणाऱ्या पदार्थांचा समावेश होतो का ?

प्रकार : प्रमाण : वारंवारता :

- तुमच्या आहारात चायनीज / इटालियन / थाय पदार्थांचा समावेश होतो का ?

आहारात येणारे पदार्थ:

प्रकार : -

घरी बनवून / बाहेरून तयार आणलेले

- हॉटेल /बाहेरचे खाणे होते का ?

प्रकार :

प्रमाण :

वारंवारता :

रुग्ण नाम : _____

आनुवंशिकता प्रश्नावली

मातृकुल

नातेवाईक	नाते (सख्खे/ चुलत इ.)	कॅन्सरग्रस्त अवयव	निदानसमयी वय	चिकित्सा	निदानपश्चात आयुमर्यादा	इतर व्याधी
आजोबा						
आजी						
माता						
मावशी						
मामा						
भाची						
भाचा						

पितृकुल

नातेवाईक	नाते (सख्खे/ चुलत इ.)	कॅन्सरग्रस्त अवयव	निदानसमयी वय	चिकित्सा	निदानपश्चात आयुमर्यादा	इतर व्याधी
आजोबा						
आजी						
पिता						
आत्या						
काका						
भाची						
भाचा						

स्वकुल

नातेवाईक	नाते (सख्खे/ चुलत इ.)	कॅन्सरग्रस्त अवयव	निदानसमयी वय	चिकित्सा	निदानपश्चात आयुमर्यादा	इतर व्याधी
भारु						
बहिण						
मुलगी						
मुलगा						

Sr.No	Name	Age	Age during diagnosis	Metastasis	Age during metastasis	Age during Distal metastasis	Average time span LN	Average time span for distal Metastasis	Occupation	Diagnosis Right /Left	Date of Original Diagnosis	Type	Grade	Stage	Metastasis												Kula Vritta (Modern)	Modern aspect with respect to Relatives				Kula Vritta (Ayurved)	Ayurvedic Aspect with respect to Relatives					
															LN	Other Breast	Chest Wall	Lung	Liver	Brain	Skeletal	Omentum	Genitals	Skin	Degree of Relatives 1st degree 2nd degree 3rd degree or combinations	Total no.Of Relatives		No.Of Relatives 1st Degree Relatives	No.Of Relatives 2nd Degree Relatives	No.Of Relatives 3rd Degree Relatives	Degree of Relatives Matrakul Pitrakul Swakul or combinations		Total No of Relatives	No.Of Relatives Matrakul	No.Of Relatives Pitrakul	No.Of Relatives Swakul		
1	V.V.P	8	2	1	2	4	1	6	2	1	08/09/2010	3	3	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	2	0	2	0
2	L.N.J	9	2	1	2	4	1	6	1	1	17/09/2009	3	3	6	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	2	1	0	1	0	
3	M.S.N	6	2	1	2	4	1	6	2	2	07/01/2012	3	3	6	1	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	1	2	1	0	1	0		
4	H.M.N	5	1	0	4	4	6	6	2	2	19/06/2009	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	4	4	1	3	0	1	4	4	0	0		
5	G.M.G	2	1	1	1	4	1	6	2	2	16/12/2010	3	3	3	1	0	0	0	0	0	0	0	0	0	0	0	4	4	1	3	0	4	4	3	1	0		
6	S.K.S	5	1	1	1	4	1	6	1	1	21/01/2010	3	3	4	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	3	1	0	0	1	0		
7	P.B.S	4	1	1	1	4	1	6	2	1	25/09/2007	3	3	3	1	0	0	0	0	0	0	0	0	0	0	6	3	0	2	1	4	3	2	1	0			
8	D.S.V	5	1	1	1	1	1	5	2	2	05/12/2000	3	3	4	1	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	1	1	1	0	0			
9	A.A.B	6	2	1	2	4	1	6	1	2	07/10/2010	3	3	3	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	2	1	0	1	0			
10	M.S.K	8	2	1	2	4	1	6	1	2	24/12/2007	3	3	5	1	0	0	0	0	0	0	0	0	0	0	4	2	1	1	0	1	2	2	0	0			
11	K.A.F	9	2	1	2	3	1	3	1	2	16/03/2008	3	3	5	1	0	0	0	1	0	0	1	0	0	0	1	2	2	0	0	4	2	1	1	0			
12	S.M.T	9	2	1	2	4	1	6	1	2	19/04/2011	3	2	5	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	2	1	0	1	0			
13	M.H.D	6	2	1	2	4	1	6	1	1	21/09/2010	3	3	3	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0			
14	M.U.N	5	1	1	1	4	1	6	2	2	30/10/2010	3	3	7	1	0	0	0	0	0	0	0	0	0	0	4	2	1	1	0	1	2	2	0	0			
15	U.U.M	3	1	1	1	1	1	2	1	1	2010	3	3	5	1	0	0	0	1	0	0	1	0	0	0	4	3	1	2	0	4	3	1	2	0			
16	P.U.T	3	1	1	1	4	1	6	2	1	19/12/2011	3	3	4	1	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	2	0	2	0			
17	S.V.K	10	3	1	3	3	2	3	6	2	20/10/2011	3	3	5	1	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	3	1	0	0	1			
18	S.C.K	8	2	0	4	4	6	6	1	1	17/09/2008	3	2	1	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	5	2	1	0	1			
19	M.R.A	5	1	1	4	2	6	3	2	1	08/11/2006	3	3	3	0	1	0	0	0	0	0	0	0	0	0	4	2	1	1	0	1	2	2	0	0			
20	M.M.V	7	2	1	2	4	1	6	2	1	17/05/2001	3	2	3	1	0	0	0	0	0	0	0	0	0	0	6	3	0	1	2	2	3	0	3	0			
21	G.J	8	1	1	1	2	6	5	4	1	05/11/1992	3	3	3	1	1	0	1	1	0	0	0	0	0	0	1	2	2	0	0	5	2	1	0	1			
22	U.N.K	8	2	1	2	4	1	6	2	2	16/06/2004	3	3	3	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0			
23	V.V.D	11	3	1	3	3	6	3	1	2	28/10/2010	4	2	8	0	0	0	0	0	0	0	1	0	0	0	6	2	0	1	1	1	2	2	0	0			
24	S.L.G	6	2	0	4	4	6	6	1	1	26/02/2005	3	3	1	0	0	0	0	0	0	0	0	0	0	0	4	3	1	2	0	7	3	1	1	1			
25	S.V.M	9	2	0	4	4	6	6	1	2	18/09/2007	3	3	3	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	4	2	1	1	0			
26	K.R.V	12	3	1	3	3	1	1	1	2	09/09/2008	3	3	8	1	0	1	1	0	0	1	0	0	1	1	1	1	0	0	3	1	0	0	1	0			
27	S.A.C	9	2	1	2	4	1	6	1	1	27/01/2009	3	2	4	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	3	1	0	0	1			
28	S.C.D	8	2	1	2	4	2	6	1	1	26/07/2007	3	3	7	1	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	1	0	1	0			
29	H.V.W	4	1	1	1	4	1	1	2	2	20/4/2009	3	3	1	1	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	1	1	1	0	0			
30	A.A.V	6	2	1	2	4	1	6	1	2	24/05/2008	3	2	5	1	0	0	0	0	0	0	0	0	0	1	3	0	0	3	4	3	1	2	0				
31	S.S.M	10	3	1	3	3	1	1	1	1	03/07/2012	3	3	8	1	0	0	0	0	0	0	1	0	0	0	2	1	0	1	0	1	1	1	0	0			
32	J.R.P	11	3	1	3	3	1	4	1	1	06/08/2008	3	3	4	1	0	0	0	1	0	1	0	0	0	1	2	2	0	0	3	2	0	0	2	0			
33	A.S	7	2	1	2	4	1	6	1	1	19/03/2010	3	3	5	1	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	1	0	1	0			
34	S.A.R	6	2	1	2	4	1	6	1	2	27/11/2008	3	2	4	1	0	0	0	0	0	0	0	0	0	0	5	2	1	0	1	6	2	0	1	1			
35	A.S.B	5	1	1	1	1	1	1	1	2	10/12/2007	3	3	6	1	0	1	0	0	0	0	0	0	0	0	4	3	1	2	0	1	3	3	0	0			
36	R.S.S	5	1	0	4	4	6	6	1	2	05/08/2010	3	2	3	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	0			
37	A.P.K	10	2	1	4	2	6	5	6	1	05/02/1997	3	2	3	0	0	0	0	0	0	0	0	0	1	0	4	4	1	3	0	4	4	1	3	0			
38	P.U.T	12	3	1	3	3	1	5	6	2	20/05/1999	3	3	4	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	0			
39	V.A.H	9	2	0	4	4	6	6	2	2	24/01/2013	3	3	1	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	3	2	0	0	2			
40	V.V.S	9	2	1	2	4	1	6	2	2	18/02/2012	3	3	4	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0			
41	S.P.A	6	1	1	1	2	1	4	2	1	04/08/2009	3	3	4	1	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	3	1	0	0	1			
42	S.N.N	7	2	1	2	2	6	4	2	1	08/05/2009	3	3	3	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	1	1	1	0	0			
43	P.S.P	5	1	0	4	4	6	6	4	1	22/12/2009	3	3	1	0	0	0	0	0	0	0	0	0	0	0	6	4	0	2	2	1	4	4	0	0			
44	R.A.T	9	2	1	2	4	1	6	6	2	23/04/2009	3	3	4	1	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	1	2	2	0	0			
45	J.N.M	6	2	1	2	4	1	3	1	1	27/01/2011	3	2	4	1	0	0	0	0	0	0	0	0	0	0	4	2	1	1	0	1	2	2	0	0			
46	S.K	5	1	0	4	4	6	6	1	2	10/12/2008	3	3	3	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0				
47	U.N.K	12	3	1	3	4	1	6	1	1	23/10/2009	3	3	3	1	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	3	2	0	0	2			
48	D.S.V	5	1	1	1	1	1	5	2	2	05/12/2000	3	3	4	1	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	1	1	1	0	0			
49	U.N.K	10	3	1	3	3	1	2	1	2	07/02/2008	3	3	3	1	0	0	0	1	0	0	0	0	0	1	2	2	0	0	5	2	1	0	1				
50	S.V.D	8	2	0	4	4	6	6	1	2	16/1/2009	4	2	4	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	3	1	0	0	1				
51	V.A.L	5	1	1	1	4	1	6	2	3	15/9/08	3	3	7	1	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	1	1	1	0	0			
5																																						

Statistical Coding for Aahar Hetu

Specification		Statistical Coding	
1.	Serial Number	--	
2.	Name	--	
3	Age	Less than 20 yrs	1
		21 – 25 yrs	2
		26 – 30 yrs	3
		31 -35 yrs	4
		36 – 40 yrs	5
		41 -45	6
		46 – 50	7
		51 – 55	8
		56 – 60	9
		61 – 65	10
		66 – 70	11
		Above 70 yrs	12
4.	Age During Diagnosis	21 – 40 yrs	1
		41 – 60 yrs	2
		Above 60 yrs	3
5.	Metastasis	Yes	1
		No	0
6	Age during Lymph Node Metastasis	21 – 40 yrs	1
		41 – 60 yrs	2
		Above 60 yrs	3
		Not Applicable	4
7	Age During Distal Metastasis	21 – 40 yrs	1
		41 – 60 yrs	2
		Above 60 yrs	3
		Not Applicable	4

8	Average time span Lymph Node Metastasis	Sametime	1
		< 1 year	2
		1 yr – 2 yr	3
		3 yr – 5 yr	4
		> 5 years	5
		Not Applicable	6
9	Average time span Distal Metastasis	Sametime	1
		< 1 year	2
		1 yr – 2 yr	3
		3 yr – 5 yr	4
		> 5 years	5
		Not Applicable	6
10	Occupation	Housewife	1
		Employed	2
		Shift Duty	3
		Self Employed	4
		Student	5
		Retired	6
11	Diagnosis	Left. Breast	1
		Right Breast	2
		Bilateral Breasts	3
12	Date of Diagnosis	--	
13	Type of Carcinoma	DCIS	1
		LCIS	2
		IDC	3
		ILC	4

14	Grade	I	1
		II	2
		III	3
15	Stage	IA	1
		IB	
		II A	2
		II B	
		III A	3
		III B	
		III C	
16	Metastasis in Lymph nodes & /or Organs	Yes	1
		No	0
17	Rasatiyog - Madhur , Amla , Lavan , Katu ,Tikta , Kashaya	Yes	1
		No	0
18	Veerya	Ushna	1
		Sheeta	2
		Ushna +Sheeta	3
19	Karma	Vishtambhi	1
		Vidahi	2
		Abhishyandi	3
		Vishtambhi+Vidahi	4
		Vidahi + Abhishyandi	5
		Vishtambhi + Abhishyandi	6
		Vishtambhi + Vidahi + Abhishyandi	7

20	AaharPrakar	Shakahara	1
	Shakahar / Mansahar	Mansahar	2
		Mishrahar	3
21		AshanaPrakar	Yes
	Anashana ,Uposhana/AlpaBhojan	No	0
	AtiBhojan ,Adhyashana , Samashana		
	Vishamashana ,Viruddhashana		
	Anna Parivartana		
	,AsatmyaBhojan/KritannaBhojan , (Outside Food)		
22	AnuktaDravya	Food preservatives	1
		Bakery Products	2
		Fermented Food	3
		Food preservatives + Bakery Products	4
		Food preservatives + Fermented Food	5
		Bakery Products + Fermented Food	6
		Food preservatives + Bakery Products + Fermented Food	7
		None	8
23.	AnuktaDravya	Soft Drinks	1
		Ice Cream	2
		Soft Drinks + Ice Cream	3
		None	4

Statistical Coding for Anuvanshikta Hetu

	Kulavritta(Modern Medicine Aspect)	Only 1st Degree Relatives	1
		Only 2nd Degree Relatives	2
		Only 3rd Degree Relatives	3
		1st +2nd Degree Relatives	4
		1st +3rd Degree Relatives	5
		2nd +3rd Degree Relatives	6
		1st +2nd +3rd Degree	7
	Total No. of Relatives	1 st Degree	
		2 nd Degree	
		3 rd Degree	
	Kulavritta (Ayurvedic Perspective)	Only Matrukula	1
		Only Pitrukula	2
		Only Swakula	3
		Matrukula + Pitrukula	4
		Matrukula +Swakula	5
		Pitrukula + Swakula	6
		Matrukula +Pitrukula +Swakula	7
	Total No. of Relatives	No.of Relatives Matrukul	
		No.of Relatives Pitrukul	
		No. of Swakul	