



Review Article

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AN AYURVEDIC OUTLOOK TO HEAL CANCER

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ABSTRACT

Cancer is one of the most dreadful diseases of present century. Many efforts have been taken yet but success is still far, that's why terror of disease is bigger than the disease. Recent study shows that 7 lakh people died of cancer every year in India and mortality rate is higher in males than females¹. In spite of spending lot of money on the research and medical aid for the treatment of cancer but no fruitful result come to an end. However due to sincere hard work done by all branches of medical science, some concepts develop and little bit light seen in treatment process of cancer. Cancer is not new term to ayurveda. Our great trio (Charak samhita, Sushruta samhita, Ashtang samhita) had already described about the disease. Acharya Sushruta, the father of Indian surgery, has mentioned the granthi and arbuda which has resemblance with the observations and clinical entities of cancer. The present paper expounds those diseases with possible interpretations in modern system of medicine on the other hand possible Ayurvedic treatment which is described in classical texts.

Keywords: Ayurveda, granthi, arbuda, cancer and Ayurvedic treatment

INTRODUCTION

In 2012, WHO released new statistics on cancer incidence, mortality, and prevalence world wide i.e. GLOBOCAN 2012 estimates for 28 types of cancer in 184 countries in which there is more prevalence of cervix and breast cancer. According to survey 8.2 million cancer deaths and 14.1 million new cases arise in 2012, which will increase to 19.3 million new cases per year by 2025. More than half of the new cases of deaths occurred in less developed regions of the world².

For the treatment of such dreadful disease several researches have been conducted on its gene and molecular level but no fruitful result came. However, in contrast to classical medicine that has existed for thousands of years from the time of Vedas has described many herbs and formulations which not only useful for the treatment but also promote good health and longevity without any side effects to mankind.

Classical Concept

Our great trio has already mentioned that human body is based on Dosha, Dhatu, and Mala. Whenever there is any psychological and pathological changes in our body

occurs it causes imbalance of above said. As a result it leads to inflammation i.e. Shopha³.

Charak³ and Sushruta⁴ Samhita have described cancer as a Granthi (minor neoplasm) or Arbuda (major neoplasm) which can be stated as inflammatory or non inflammatory swellings. When there is involvement of 1 or 2 Doshas i.e Vatta, Pitta, Kapha they produce benign neoplasm which is not harmful whereas when there is Sannipatja i.e involvement of all three Doshas it produces malignant neoplasm which is dangerous⁴.

Granthi is nothing but a pathological condition of vitiated Doshas in muscular tissues, blood, fat and structure of vessels which results into gland like abnormal growth or neoplasm. It looks like bubble of water, round erect and knotted⁵.

According to Acharaya Sushruta, Shopha can be used as term in the progression of Arbuda due to involvement of vitiated Doshas. This results into Vidradhi that suppurates due to vitiated Doshas. Vidradhi is parallel term for the abscess. If it suppurates than forms Arbuda and when it does not suppurates it forms Gulma which can be proceeded to Granthi.

Classification of cancer

Table 1: Ayurvedic & Modern classification^{6,7}

Depending on Doshha	On the basis of Dhatu	On the basis of Metastasis	According to site	According to pathogenesis	On the basis of treatment	Modern Classification
1. Vataj 2. Pittaj 3. Kaphaj 4. Tridoshaj	1. Raktarbuda 2. Mamsa 3. Medoja	1. Raktarbuda 2. Adhyarbuda 3. Dviarbuda	1. Vartmarbuda 2. Karnarbuda 3. Nasarbuda 4. Taluarbuda 5. Jalarbuda 6. Galarbuda 7. Mukharbuda 8. Sira arbuda 9. Shukrarbuda	1. Sadhya 2. Asadhya	1. Naveen 2. Jeerna	1. Benign 2. Malignant

Etiology

Our great ancient Ayurvedic seer Acharya Sushruta has mentioned different layer of skin in sharir sthana where he has described the origin of neoplasm in 6th layer that is Rohini⁸ and all the lesion are developed due to wrongly adopted lifestyle, unhealthy foods, poor hygiene and bad habits results in vitiation of doshas which ultimately leads

to formation of tumor in body. Due to rigid confinement of Doshas non infectious and non suppurative abnormal growth were raised which leads to excess of water and fat in corpus of the tumor. According to different exposure and genetic constitution and intake of same constituents of diet will leads to different pathogenesis^{4,9}.

Table 2: Doshas & Aggravating factors

DOSHAS	FACTORS
Vataj	Excessive intake of Katu (bitter), Tikta (pungent), Kshaya (astringent), Ruksha Ahara (dry food), and nerve wrecking conditions
Pittaj	Excessive intake of Amla (sour), Lavana (salty), and fried food and excessive anger.
Kaphaj	Excessive intake of Madhura (sweet), Snigdha (oily), food and desk bound life style.
Raktaj	Excessive intake of Amla (acids), Kshara (alkali), containing food, fried and roasted foods and alcoholic beverages. Excessive anger or severe emotional upset, scorching heat and hot climate etc.
Mamsa	Excessive intake of food like meat, fish, milk etc exudative foods, excessive sleep during day and overeating are some promoting factors.
Medoj	Excessive intake of oily food, sweets, alcohol and lazy attitude.

Pathogenesis

Stages of Pathogenesis¹⁰

During Sanchaya Avastha, neoplastic changes start in advance about 10 to 15 years earlier. At gene level various genetic alterations starts. Thereafter in Prakopa stage metastasis starts. Prasara Avastha presents with

many metastatic changes followed by chemical and enzymatic factors get initiated in the body. Sthanasamsharaya Avastha exhibits with complete metastasis and secondary. Complete obstruction to the movement of vitiated doshas at a particular site i.e. cell receptor is noticed in Vyakata Avastha.

Clinical Manifestation¹¹

Table 3: Granthi with clinical features

Vataj Granthi	Swelling of vataj variety seems as if it were drawn into and elevated or as if served or pricked with needle, as if cut in two or pierced. Swelling is long, rough, black color. If this granthi burst than bright red clear exudation takes place.
Pittaj	Burning sensation, red or yellow in color, pain as if it is being boiled by an alkali or fire. Exudation is extremely hot blood on bursting.
Kaphaj	Painless, hard pale, area around is cold and itches, suppurates slowly and pricked thick, white and cloudy pus exudates.
Raktaj	Loss of tactile sensations, symptoms, similar to pitta granthi.
Mamsa	Large, hard, oily tumour tends to be very vascular. They ulcerates and bleed easily. Symptoms similar to kaphaj growth.
Medaj	Soft, fatty tumour but movable. Exudes coppery, white or black fatty fluid.
Asthi	Tumours grows outside of the normal area of the bone.
Sira	Vascular tumours, painless and don't pulsate. Contracting, dehydrating and deformation.
Vrana Granthi	Itching and burning sensation.

Arbuda

- Vata,pitta, kapha, Mamsa and Medaj having similar clinical features to that of granthi's clinical features.
- Rakta arbuda: - Vitiated doshas contracting, compressing and drawing the vessels and blood raised a slightly suppurated and exuding tumor which is covered with small warts and fleshy tubercles is called as raktarbuda. There is rapid growth and exudation of blood constantly.

Treatment

For the cancer treatment modern science has developed many drugs but these drugs burdened the patient by drug induced toxic effects. So in that case Ayurvedic medicine has ability to cure such diseases. Our classical texts stated healthy man as equilibrium of tridosha, agni, dhatu and mala. So, considering that firstly we have to stable the above said. Another text described apakarshan, prakruti vighat and nidana parivarjan as the line of treatment¹². In apakarshan with the help of instrument or without

instrument the disease is eroded from the body, i.e., with instrument surgery and without instrument panchkarma. Prakruti vighat means for the health maintenance there should be change in diet and herbal medication prescription. Nidan parivarjan means to avoid carcinogenic food. Former type of treatment can be summarized as Shodhana and Shamana Chikitsa. Shodhana treatment is a purification process which eliminates doshas. Panchkarma therapy can be given under shodhana chikitsa. Whereas shaman therapy is a curative therapy which pacifies doshas and gradually relieves the diseases and commonly prescribed for weaker patient.

During the treatment of Arbuda, Rasayana (immune-modulator) should be prescribed because they acts as antioxidants and corrects the Agni or improves digestion by correcting metabolic defects which further overcome the side effects or complications of anti-cancerous drugs. This type of treatment came under Vyadhi Pratyantik Chikitsa. In ancient era when Arbuda was difficult to treat by medications then surgery was the ultimate treatment, which includes external application of paste, fomentation, cleansing followed by internal medications, liquefaction of contents, fully evacuation of swelling, to avoid recurrence Agnikarma (cauterization) followed by post operative wound care.

Palliative Therapy

Palliative therapy can be an option for patients that are specific to the sense of approaching death. These may include psychosocial interventions (Mantras japa, prayer), relaxation techniques, cognitive behavioral therapy (Pranayama, Dharana, Dhyana, Smadhi), counseling, music therapy, emotional support, social support from patients and relatives. (Sushruta reference 19 th chap 19/8)

Palliative therapy can be prescribed like Pranayama, Yoga, Dhyana, Dharana, Samadhi meditation, prayer and chanting of Mantra, nutritional diet plans and interventions along with psychotherapy and astrology.

Table 4: Properties of anti-cancerous herbs²¹

Guna	Ruksha, Tikshana, Ushana
Rasa	Katu, Tikat
Virya	Ushana
Vipaka	Katu

Classical treatment protocols for various tumours in Ayurveda²²

Granthi

Vata: Rohini (*Helloborus niger*), Guduchi (*Tinospra cardifolia*), Bharangi (*Clerodendron serratum*), Bilva

(*Aegele marmelos*), Payas (*Hoya verdifolia*), Gojihva (*Elephantopus scaber*), Atiroha (*Soyamida febrifuga*) and Arkapushpika (*Gynandropis pentaphylla*) were applied locally.

Pitta: Bhibhitaki (*Terminalia chebula*) and grape juice used orally, external application of paste of Yassthimadhu (*Glycyrrhiza glabra*), Jambu (*Eugenia jambolona*), Arjuna (*Terminalia arjuna*).

Kapha: local application of paste of Kokilaksha (*Capparis spinosa*), Kakadni (*Capparis sepiaria*), Agasti (*Agate glandiflora*), Lauki (*Llagineria vulgaris*), Bharangi (*Premna herbacea*), Karanj (*Pongamia glabra*), Kashthila (*Musa sapientum*) and Madanphal (*Randia dumetorum*).

Arbuda

Classical procedures: Snehana (fomentation), Agnikarma (cauterization), Lekhan a (scrapping), Raktavisravana (bloodletting), Basti Karma (medicated enema) and Shastra karma (surgery), Daily consumption of Upedika (*Basella rubra*), use of Kshara (alkali) preparation.

a) Vata: paste of Kushmanda (*Benincasa cerifera*), Balku (*Cucumis memordica*), Narikel (*Cocos nucifera*), Eranda beeja along with butter and milk.

b) Pitta: use leaves of Kuchandan (*Ficus glomerata*), Shaakpha l (*Tectona grandis*), Gojihva (*Elephantopus scaber*) repeatedly and make a fine paste of Priyangu (*Aglaja roxburghiana*), Kuchandan (*Caesalpinia sappo*), Rodra (*Symplocas racemosa*), Arjuna (*Terminalia arjuna*), Aantragala (*Xanthum strumarium*).

c) Kaphaj: after surgical removal of tumour, decoction prepared from Mahashwet (*Clitoria ternatea*), Jati (*Jasminum grandiflorum*) and Karvir (*Nerium odorum*) leaves was used. Local application of oil prepared from Bharangi (*Premna herbacea*), Vidanga (*Embelia ribes*), Patha (*Cissampelos pareira*).

d) Medaja: External application of paste honey and Haridra (*Curcuma domestica*), Gdhoom (*Triticum sativum*), Rodra (*Symplocus racemosa*). Internal oleation of Karanja (*Pongamia glabra*) oil.

Table 5: Rasa aushadhis²³

Preparation	Contents	Indications
Arbudahara ras	Mercury and sulphur macerated with decoction of beetle leaf, cows urine	All types of cancer
Lok nath ras	Mercury, sulphur, mica, aloe vera, iron oxide, ground with Makoy (<i>Solanum nigrum</i>)	Liver, spleen, and GIT cancer
Suvarna	Gold dust	Used in lymph node enlargement
Tamara bhasama	Colloidal powder	All types of cancer
Abharaka bhasama	Mica	All types of cancer
Manhashila application	Arsenic sulphide	External

Life Style Changes

- Do exercises, take long walk.
- Go for meditation and yoga for mental and physical relaxation.
- Listen harmonious music that is soothing, calming and healing for the mind thoughts and nervous system.

Diet^{24,25}

- Prescribe diet according to body constitution.
- Eat sattvic and biological fresh fruit, vegetables, cereals as much as possible. Consumes milk, fruit juices, butter and fresh cheese, fresh nuts and seeds, sprouts, honey and herbal tea.
- Say no to snacks, fast food and ready to eat food.
- Reduce the use of microwave ovens. This increases the Kapha nature of the food and therefore the Kapha in the body.
- Body as well, after consumption.
- Consumes less meat especially red meat. Reduce intake of meat in growth phase. Consumes fresh meat and alternative source of meat.
- In case of anorexia eat small frequent meals. Eat the food patient enjoy, have ready to eat snacks like crackers, cheese, nuts, and seeds, ice cream, bars or yoghurt. Change the diet plan if appetite is better.
- Persons having pitta constitution and sufficient strength can have raw vegetables, germ milk, sprouted food along with garlic and ginger.
- Persons who went radiotherapy should consume immune-modulators like.
Amrit parash, Ashwgandha (*Withani somenifera*), *Sida cardifolia*, Bhringraj, Dashamool, Guduchi (*Tinospora cardifolia*), Krunj (*Pongamia glabra*), Neem (*Azadirachta*), Lavan bhaskar. Pippali (*Piper nigrum*), Shatavari (*Asparagus racemosus*), Tulsi (*Ocimum sanctum*), Vidari kandha, Triphala, Yashtimadhu (*Glycyrrhiza glabra*), Shilajit, Yograj Guggulu.
- Consumes ½ liter red beet or carrot juice and 2 bowls soup for 3 months. It has anticancer activity.
- Use turmeric powder in morning with a lukewarm water, also has anti cancer property.

Herbs According Tumours

- There is imbalance of Pitta and Kapha in lymphatic, blood and skin cancer so fresh herbs like Manjishta (*Rubia cardifolia*), Kesar (*Crocus*), Chameli (*Jasmine*), *Smilax regelii* can be consumed.
- Vata and Kapha imbalance is present in thyroid, neck or lymphatic cancer so herbs like keilp, seaweed, irish moss, *Piper nigrum*, *Piper longum*, *Ginger*, *Yograj Guggul*, *Jasmine*, *Commiphora*, Turmeric and Trikatu can be used.
- In brain tumor there is involvement of Vata Kapha Doshas so preferably Manjistha and Brahmi should be

given including Shirodhara and Panchkarma according to Roga and Rogi Bala.²⁵

Role of Panchakarma in Cancer Treatment

Panchkarma is a type of Shamshodhan Chikitsa. It is not only activates the body's self healing ability but also calm the Doshas and Gunas including removal of Kapha and toxins from the body. In this body channels are cleansed and nourishment and revitalization of Dhatus is done with specific herbs according the cause, site and strength of patient (Rog Avam Rogi Bal Anusar). If a patient underwent chemotherapy and radiotherapy it is beneficial for both body and mind. After Panchkarma therapy Brahma Rasayan should be given prescribed along with immune-modulators and antioxidants (*Withania*, *Ginger*, *Podohyllum hexandra*, Amla, Guduchi etc).^{25,26,27}

Research on cancer

For the treatment of cancer many clinical trials have been done. Many case reports are available that shows efficacy of herbs and the treatment used. Ayurvedic treatment is very individualized, so it is very difficult to conduct clinical trials on such a large population. Also anticancer agents has unknown and uncertain clinical efficacy and extent of toxicity. Research should be done on the identification of safe and effective anticancer drugs along with the mechanism of action. The National Center for Complementary and Alternative Medicines has recommended for the randomized clinical studies to determine the herbs and formulations containing multiple constituents.

CONCLUSION

All these studies indicate the awareness of malignancy & provide a glimpse of the Ayurvedic approach to cancer diagnosis and treatment. This review also attempts to reveal how these approaches can be employed in today's world. Although current treatment tends to be highly focused at the molecular level, it is highly unfocused at the whole organism level, making it reductionist. Ayurvedic treatment of cancer is a holistic approach and is currently preferred. The new wave of "system biology" and "genome revolution" is expected to provide a holistic approach to the treatment of cancer. Many anecdotal and case reports are available that show the efficacy of the herbs and the treatments used. Many studies are done with individual herbs or their derivatives, for example Ashwagandha, Guggulu, Kutki, Shatavari, Brahmi, Guduchi, Amlaki, Shunti but very few studies available with complex herbal formulations, for example Brahma rasayanam, Bhallatak Rasayanam, Triphala rasayanam. Some human clinical trials are under way with curcumin, resveratrol, and flavopiridol, which show promising results. More randomized clinical trials need to be done for the herbs and formulations containing multiple constituents

Table 6: Pharmacology of Ayurvedic anticancer drugs²⁸⁻³²

Drug Name	Therapeutic Dose	Side Effects	Interaction with other drugs
1.GUNJA (<i>Abrus precatorious</i>)	Leaf decoction 56-112ml root powder 0.5mg	Nausea, stomach cramping, coma	None
2.RASON (<i>Allium sativum</i>)	2-5g/day Solid extract 0.3-1g Oil 0.03-0.12ml tds	Stomach upset, may cause hemorrhagic complications,	Shows interactions with aspirin, diuretics,
3.GHRITA KUMARI (<i>Aloe vera</i>)	Extract 10-20 ml Powder 0.05-0.2g	Long term may cause ulcers, hemorrhoids, lethargy, nasal congestion, allergy	General anaesthesia
4.SURNA (<i>Amorphophallus campanulatus</i>)	0.3-0.6g	None	None
5.KAAL MEGH (<i>Andrographis paniculata</i>)	Powder 1.5-6g Juice of leaves and stem 1-4ml tds Andrographolide 4-6mg	Nausea, anorexia, emesis, urticaria	Interacts with anticoagulant and antihypertensive drugs
7.ENDERI (<i>Bacopa monniera</i>)	Powder 5-10 g	Dermatitis	Not known
8.DARU HARIDRA (<i>Berberis aristata</i>)	Powder 1-3g	Lethargy, nose bleeding, nausea, diarrhoea	Interacts with vit B assimilation
9. SHALAKI (<i>Boswellia serrata</i>)	0.4g/2-3 times a day, Gum resin 2-3g, oil 1-1.5ml, bark decoction 56-112ml	None	Not known
10.HARIDRA (<i>Curcuma longa</i>)	Powder 1.5-3g	Contraindication in gastric ulcers	No interactions
11. DHATURA (<i>Datura stramonium</i>)	0.05-0.1g	Vomiting ,hypertension, loss of consciousness, coma	Interact with anticholinergic drugs
12.PEPPAL (<i>Ficus religiosa</i>)	Bark powder 1-3g liquid extract 60- 120ml	Allergy if large dose is consumed	
13.ARKA PUSHPIKA (<i>Gynandrophis pentaphylla</i>)	Powder 2g	None	No interaction
14.HAPUSHPA (<i>Juniperus communis</i>)	Powder 2-10g	Long term use causes kidney damage	Interact with anti diuretic drugs
15.DHAMARGAVA (<i>Luffa cylindrica</i>)	Powder 1.3-1.9g	Not reported	No interaction
16.MAHA NEEM (<i>Melia azaderach</i>)	Liquid extract 15-30ml	None	No interaction
17.KARVEER (<i>Nerium indicum</i>)	Powder 0.25-0.4g	Nausea, vomiting, diarrhoea	Not known
18. TULSI (<i>Ocimum sanctum</i>)	Powder 1-3g, leaf infusion 4-12ml	Constipation if consumed in large dose for long time	Not known
19.VIDARI (<i>Paederia foetida</i>)	Powder 2-4g, liquid extract 56-112ml	None	No interaction
20.KATUKI (<i>Picorrhiza kurroa</i>)	Powder 0.5-1g	Nausea, skin rash, diarrhoea	No interaction
21.PIPPALI (<i>Piper longum</i>)	Powder 0.5-1g	Contraceptive activity, avoid during lactation and pregnancy	Piperine may interact with enzymatic drug biotransformation
22.CHITRAK (<i>Plumbago zeylanica</i>)	Powder 1-2g	Not reported	Not reported
23.MOOLAK (<i>Raphnus sativus</i>)	Powder 15-20 g liquid extract 50- 100ml	Gastrointestinal mucous membrane irritation if it consumed in large dose	Not recorded
24.MANJISHTHA (<i>Rubia cardifolia</i>)	Powder 1-3 g, liquid extract 56-112ml	Not reported	Not known
25.BHALLATAK (<i>Semecarpus anacardium</i>)	Oil 1-2 drops, fruit 0.5-1.5g	Allergy due to anacardic acid	Not reported
26.GUDUCHI (<i>Tinospora cardifolia</i>)	Powder 1-3g	Nausea	May inhibits vitamin B assimilation
27.RATTANJOT (<i>Vinca rosea</i>)	Dosage depend on disease severity	Gastrointestinal upset, hepatotoxicity, nausea, vomiting, hypoglycaemia	No interaction
28.DRAKSHA (<i>Vitis vinifera</i>)	Powder 0.15-0.3g	Not reported	No interaction
29.ASHWAGHANDHA (<i>Withania somnifera</i>)	Powder 2-6g	Nausea, dermatitis, abdominal pain, diarrhea	May potentiate action of barbiturates and benzodiazepines

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