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Review Article

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Chaturavidh Nigrah Hetav in the Cancer Management: A Brief Review

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Abstract: Cancer is a disease of swelling which may be of inflammatory or non-inflammatory in origin and is an outcome of modern civilized and a tie vicious circle or irregularities in life affecting activities headed by modern medicine system, but a confirmatory treatment is yet awaited. In Ayurveda disease cancer has more resemblance to *Arbuda*. *Sushruta* mentioned 6 types of *Arbuda* among *Mamsa* and *Rakta Arbuda* are malignant and is difficult to manage these as per their pathogenesis. In tumours with malignancy features *Tridosha* gets co-ordinated and create a state of instability between them which leads to damage of tissues and further causing some serious conditions. Treatment of cancer not only increases the financial burden for an individual, it also causes potential side effects which in a term set a vicious cycle for medical dependency; hence, there is an emerging need to hunt an efficient, reliable, safe, and economical option for the same. The article aims to assess current available Cancer management options in *Ayurveda* manage and classify them under roof of *Chaturavidh Nigrah Hetav*. Studies reviewed from including data on electronic database, Pub Med, Embase, and the Cochrane Library, Ayurvedic literature and manually collected from various resources. Ayurveda has a holistic approach to managing any disorder, instead of using targeted therapies to destroy the tumours. Results of studies showed that adopting principles of Ayurveda improves the patient's well-being, as an additional therapy or mainline treatment protocol along with

chemotherapy and radiotherapy, which improves the life span and enhance the quality of life an individual is leading.

Keywords: Ayurveda, *Arbuda*, Antioxidant, Cancer, Complementary therapy, *Panchakarma*,

INTRODUCTION

Cancer is complex disease or medical condition which has inflammatory or non-inflammatory in origin and present in form of swelling. It is an outcome of interaction between environment, our genes, and chance. According to the World Health Organization, cancer, one of the worst problems that has been rapidly growing in the twenty-first century, has now formally emerged as the most dangerous killer in the world. With an anticipated 19.2 million new cases and 9.9 million deaths in 2020, it is a leading cause of death globally (Globocan, 2020).^[1] We cannot ignore the sobering fact that cancer is a result of an advanced pattern of an erratic and stressful life that is dominated by Western medicine and the addition of modernization to our lives.

Cancer management is difficult due to the numerous adverse effects of standard cancer treatments such chemotherapy, radiation therapy, and surgery. Ayurvedic medicine and other complementary including alternative cancer treatments have gained popularity in recent years. Scientists and researchers are doing their best efforts to combat this medical condition or disease; however, the confirmed treatment yet to be discovered.^[2] In Ayurveda, it can be correlated with '*Granthi*' or '*Arbuda*'. *Arbuda* is considered as more like cancer due to its property of malignancy.

Sushruta has described 6 types of *Arbuda* (tumours), out of which initial four are benign in nature and are manageable with suitable treatment modalities and therapies and remaining two types of tumours are malignant in nature.^[3] When accumulated *Doshas* impairs the functionality of blood vessels, it also hampers the normal blood circulation added with toxin deposition in them, this leads to formation of a malignant tumour, *Rakta Arbuda*. Deposited toxins may be regarded as *Ama* in Ayurveda and carcinogens in modern science which can be considered as causative factor of tumour formation. When these tumours grow in the blood vessels, metastasis through blood and lymph creating a devastating condition.

To overcome and recover this largely extending tumours with metastasis property, become challenging to manage. Blood tumours can be recognized by symptoms with inflammatory signs like fluid or pus collection near growth, metastasis of this vitiated blood is difficult to control. Disruption of muscle due to fighting leads to *Mamsa Arbuda*. Tumours are recognised if swelling resembles a punch, is stone hard to the touch, painless, glossy, and motionless without any inflammatory indications, and is the same colour as the surrounding tissue.

Mamsa Arbuda is difficult to manage due to same outcomes as *Rakta Arbuda* and is more common in who is habitual of non-vegetarian diet. In malignancy of tumours all three *Doshas* get vitiated and lose their own control and coordination with other and lead to damage in tissues and as a result it becomes an alarming situation. *Tridosha* causes an extreme metabolic crisis, which causes cells to proliferate and lose their ability to abide in contact.

NEED OF REVIEW

The health and broader social cost along with the hazardous impact on the life of patients from the available modern medicine therapies in the Cancer management. To manage cancer, it not only

increases the financial burden for an individual, but it also causes potential side effects which are a term set a vicious cycle for medical dependency; hence, there is an emerging need to hunt for an efficient, non-harming, and economical or affordable option to manage the same. Initially cancer was considered as an outcome of lose in genetic sequence i.e., mutation due to which cell growth and death become uncontrolled.

Later, research clear the fact that multiple factors including epigenetic regulation, immune function, diet, and environmental factors significantly affect the phenotype and any one of them may lead to cancer if got disturbed. In such conditions, Ayurveda is a big hope to the world, as its principles are universal and can manage most of the chronic diseases which are unanswerable to modern science. The primary distinction between modern and *Ayurvedic* cancer treatments is that Ayurveda has nature of the holistic approach to any illness and does not disturb the equilibrium of body and does not include any aggressive body treatments. It initiates the mechanism and abilities of the body to compete and develop a potency of self-healing. Ayurveda houses the wide range of treatment modalities and regimes along with medicines to purify the body and support its tissues for recovery from itself naturally.

Aim of the study: To highlight and compile the various studies reported in the context of management of cancer with Ayurveda perspective, across the globe and to classify them under the roof of *Chaturavidh Nigrah Hetav* (a concept of Acharya *Sushruta* to manage any disease).

MATERIALS AND METHODS

The research works published on the management of cancer from various sources including electronic database, textual references from books, journals, and data available on in Ayurveda Research Database, 7th edition on all PG/Ph.D. I.P.G.T. and R.A.; Jamnagar^[4] were collected manually. The materials and methodology along with results were reviewed thoroughly summarized, classified under the title of *Chaturavidh Nigrah Hetav*.

Chaturavidh Nigrah Hetav: The goal of *Ayurvedic* therapy is to identify and treat any disease's underlying cause, *Sushruta* has indicated four factors which are *Samshodhana* (extraction of *Doshas*), *Samshamana* (suppression of *Doshas*), *Ahara* (dietary factors) and *Achaar* (lifestyle). *Ayurveda* can determine the initial change in body which help us to the disease in its initial phase before it presents it in from of sign and symptoms. Even when chronic disease diagnosed as cancer of any stage, there is a multiple source are defined in Ayurveda like herbal drugs and therapeutic modalities. Ayurveda reduces the side effects of therapies such as chemotherapy or radiotherapy and make the body more compatible to fight cancer and improve quality of life by self-healing.

Ayurveda has holistic approach to manage any disorder. Ayurveda does not act to destroy the target cells of tumours rather than it heals the metabolic defects and regains the normal mechanism and functions of tissue (“*Sama Dhatu Parampara*”). In context of Cancer treatment *Chaturavidh Nigrah Hetu* mentioned in *Sushruta Samhita Vedoutpatti Adhayaya*^[5] can be highlighted here

1. *Samshodhana*
2. *Samshamana*
3. *Ahara*
4. *Achaar*

1.Samshodhana: *Samshodhana* is a process which purifies well and is of two types external and internal. External *Samshodhana* can be done with help of any sharp instrument, cautery, or caustic alkali while internal *Samshodhana* is done with the help of emesis, purgation, emanation, or bloodletting. *Panchakarma* is recommended in case of cancer to build up the ability of body to activate its healing power by itself and to restore its normal equilibrium in *Doshas* and *Gunas* by eliminating excessive and abnormal toxins from the body. Large portions of the body channels are cleansed, and the *Dhatu* are fed and regenerated using herbs, food, and complementary therapies. Its application depends on the causative factor (V/P/K), the strength of the patient, and the location of the tumour. *Panchakarma* will aid in the rehabilitation of the body and mind following chemotherapy.^[6]

Food and lifestyle incompatibility lead to vitiation of *Doshas* (toxins) in the body, and result in disease formation. Oral medication alone is not enough to correct a major illness; it also needs an additional modality to eliminate the aggravated *Doshas* from nearest or suitable pathway to out of the body. This mode of extraction of accumulated ama or toxins is termed as *Shodhana* or *Panchakarma*. Radiotherapy and chemotherapy adverse effects are lessened by *Panchakarma* therapies. *Panchakarma* is both curative and preventative in nature, allowing healthy people to undergo cancer prevention and treatments.

The body's normal cells and tissues regenerate and are more resistant to the negative effects of chemotherapy and radiotherapy. Sesame oil, both digested by lipase and undigested, significantly slowed the growth of three cancerous colon cell lines in culture, but it had no effect on the proliferation of healthy colon epithelial cells. In vitro, sesame oil specifically reduced the proliferation of malignant melanoma cell lines as opposed to healthy melanocytes. Cancer patients who have completed *Panchakarma* experienced more energy, mental clarity, and a general sense of wellbeing. Additionally, also reported reduction in symptoms along with a major improvement in health status.^[7]

Some of the reported trail or case reports on cancer management are briefly described below:

Zankhana. M. Buch published two case studies, one of which focused on a 64-year-old male patient who had been diagnosed with Non-Small Cell Carcinoma with brain metastasis and had undergone radiotherapy in the past to treat the brain metastasis. The patient did well with the treatment. Post-radiotherapy he had again gone through chemotherapy for the primary lung tumour and mediastinal lymph nodes. During his chemotherapy treatments, he attended AyurVaid Hospital, where traditional *Ayurvedic* medications were chosen for him based on his constitution to enhance his general health, lessen side effects, and target the tumour.

He had finished chemotherapy without experiencing any severe side effects, but he did experience some minor side effects like mouth coating, skin discoloration, frequent bowel movements, and abdominal pain. For these side effects, he underwent IP treatments at AyurVaid and saw a significant improvement in the a fore mentioned symptoms as well as a marked improvement in his performance status scale (Before Treatment 70, After Treatment 90).

Following *Ayurvedic* therapies, his natural killer cell and immunoglobulin levels were assessed as well, and it was discovered that they were perfectly normal, which in such instances is typically very low. Although conventional medicines are the mainstays of cancer management, his tumour did not respond to the chemotherapy, so oral chemotherapy for the following 3 months has been recommended.^[8]

Another case study by Author Zankhana. M. Buch is reported of female of 43-year-old a known case of Hypothyroidism, after complaining of irregular periods for the past month, mood swings for the

past year, anxiety, sleep disturbances for the past year, and sporadic constipation, the patient was diagnosed with endometrial hyperplasia, which had thickened to a measurement of 17.6mm and was advised for biopsy to find out if there any endometrial malignancy.

As she was not agreed to undergo this process so she visited AyurVAID hospital where oral medication with *Shirodhara* was advised for 7 days. After the finishing of therapy, her psychiatric drugs were stopped and was able to sleep without sleeping tablets. Her ultrasound reveals 7.5mm of normal endometrial thickness (5-10mm is the normal range in menopausal age group). There was great improvement in her overall health condition with proper sleep with a stable mental condition which reduces the emerging risk factor for endometrial carcinoma.^[9]

Similarly, a study concluded that *Panchakarma* improved quality of life and reduced symptoms in patients of cancer.^[10] Another study, states that *Panchakarma* reduced fatigue and improved sleep quality in cancer patients undergoing chemotherapy.^[11] *Samshodhana Chikitsa* has been found to improve the overall well-being of cancer patients and help to manage the side effects of conventional treatments, such as fatigue, nausea, and pain.^[12]

2.Samshamana: Main principle of *Samshamana* is to subside the aggravated *Doshas* without pulling out of the body. Each medication has its own active principles, and they frequently work in concert to produce therapeutic advantages and reduce the likelihood of side effects. This prevents the need for supplemental therapy to manage cancer cachexia. There are multiple options available in Ayurvedic literature about the plants or herbs which were demonstrated to possess both in vitro and in vivo against various malignancies. Several studies have shown that herbal remedies, such as *Ashwagandha* (*Withania somnifera*), turmeric (*Curcuma longa*), and *Guggulu* (*Commiphora mukul*), may have anti-tumour and anti-inflammatory properties and may improve the overall well-being of cancer patients.^[13] It has been demonstrated that some Ayurvedic plants have immune modulatory properties that kill cancer cells as well as chemo- and radio-sensitizing properties. Herbs which are mostly used in treating cancer are mentioned in [Table 1].

Table 1 Anti-carcinogens drugs used for *Samshamana*

S.N.	Drug	Properties
1.	<i>Ashwagandha</i> (<i>Withania somnifera</i>)	<ul style="list-style-type: none"> • Have multiple characteristics to inhibit the spread of the frequently fatal disease cancer. • Normal cells' antioxidant defences against cancer and protect from damage due to conventional cancer therapy. • Stops angiogenesis, the growth and spread of cancer by supplying it with new blood vessels. • Interrupts cell division and binds to proteins that malignancies require to spread and flourish. • Inhibiting the neo-vascularisation of cancerous cell.^[14]
2.	<i>Guduchi</i> (<i>Tinospora cordifolia</i>)	<ul style="list-style-type: none"> • Improves the body's natural defence system (immune system); • Helpful for liver and intestinal issues; highly advised before and after chemotherapy.^[15]
3.	<i>Triphala</i> (<i>Amalaki</i> = <i>Emblica officinalis</i> ,	<ul style="list-style-type: none"> • A potent natural antioxidant that rejuvenates tissues, • Toxicology study found that it was safe up to a level of 240

	<i>Bibhitaki</i> = <i>Terminalia bellirica</i> , <i>Haritaki</i> = <i>Terminalia chebula</i>	<p>mg/kg.</p> <ul style="list-style-type: none"> • Additionally, it has chemo-protective, radio-protective, and anti-neoplastic properties. • <i>Triphala</i> inhibits pancreatic cancer cell proliferation.^[16] • The Radiation and Cancer Biology Laboratory at Jawaharlal Nehru University reported in the December 2005 issue of the Journal of Experimental and Clinical Cancer Research that <i>Triphala</i> was helpful in lowering tumour occurrences and raising antioxidant levels.^[17]
4.	<i>Tulsi</i> (<i>Ocimum sanctum</i>)	<ul style="list-style-type: none"> • Possess anti-inflammatory, antioxidant capabilities. • Strengthens the immune system, acts as a tumour preventative, and is especially helpful in the early stages of many different types of tumours.
5.	Turmeric (<i>Curcuma longa</i>)	<ul style="list-style-type: none"> • It has been extensively studied for decades and revealed to contain the potent polyphenol curcumin, also known as diferuloylmethane, which has been clinically demonstrated to slow the growth of cancer cells that cause a variety of illnesses, including pancreatic cancer, leukaemia, breast cancer, melanoma, and prostate cancer. • Curcumin may have potential as an anti-proliferative, anti-invasive, and anti-angiogenic drug as well as a modulator of chemo-resistance and radio-resistance as well as a chemo-preventive agent, according to several preclinical cell culture and animal studies.^[18]
6.	<i>Shunthi</i> (<i>Zingiber officinale</i>)	<ul style="list-style-type: none"> • Its compounds have chemo-preventive and antineoplastic effects. • Free radical scavenging, antioxidant pathways, changes in gene expression, and induction of apoptosis are thought to be the main causes of ginger's cancer-preventive effects, which reduce tumour start, propagation, and progression.^[19]
7.	<i>Rason</i> (<i>Allium sativum</i> L.)	<ul style="list-style-type: none"> • Studies have indicated that freshly ground garlic can prevent cancer brought on by nitrosamines and polycyclic aromatic hydrocarbons.^[20] • These drugs may prevent the development of substances that cause cancer, stop the activation of substances that cause cancer, improve cell repair, lessen cell proliferation, or cause cell death.^[21]
8.	<i>Lavang</i> (<i>Syzygium aromaticum</i>)	<ul style="list-style-type: none"> • It has been utilised by traditional healers to treat respiratory and digestive conditions from ancient times and has been proved to be a powerful chemo-preventive agent.

Some of the other plants which have cytotoxic potential, *Shriphal* (*Annona muricata*), *Bolbostemma paniculatum*, *Vijaya* (*Cannabis sativa*), *Centaurea ainetensis*, *Cha/Tea* (*Camellia sinensis*), *Samudraphala* (*Salvia miltiorrhiza*), *Daphne mezereum*, *Karpas* (*Gossypium hirsutum*), *Mandookaparni* (*Hydrocotyle asiatica*), *Hypericum perforatum*, *Padmucharini* (*Nervilia fordii*), *Shyonaka* (*Oroxylum indicum*), *Kutaki* (*Picrorrhiza kurroa*), *Manjistha* (*Rubia cordifolia*), various *Scutellaria* species, *Silybum marianum*, *Chopachin* (*Smilax china*), *Kuchla* (*Strychnos nux vomica*), *Taraxacum officinale*, *Apamarga* (*Achyranthes aspera*) etc.

A study by *Chavda et al* in management of laryngeal-pharyngeal cancer, oesophageal cancer and breast cancer was reported in which 23 patients were divided into three groups at random. Total 11 patients in Group 1 received treatment with *Bhallataka* oil with dose of 10 drops once a day and in Group 2 total 06 patients were treated with *Raudra Rasa* with dose of 125 mg twice a day and in Group 3, 06 patients were treated both *Bhallataka* oil and *Raudra Rasa* with the *Anupana* of milk in all three group for months.

After the completion of study, it was observed that in Group 1 Loss of weight and loss of appetite were significantly improved, coughing and dyspnoea were also improved by 24.81% and 33% respectively and loss of interest was improved by 75%, also size of lump remained same after the therapy which indicates *Bhallataka* was found capable to maintain the stage of disease. Ratio of losing weight decrease in the all the patients, loss of appetite improved in 83% patients. In Group 2 *Raudra Rasa* was found significantly effective and loss of weight improved in 83.33%, patients' loss of appetite improved in 66.67% patients, general debility decreased in 60% patients while in Group C highly significant effect was found in loss of appetite by combined treatment and significant effect found in symptoms like loss of weight, general debility, loss of interest, pain was relived up to 50%. Study concluded that combined therapy is keeping its own importance and effective in managing the patients of cancer.^[22]

Bagda et al reported a trial on comparative effect of *Amrutadi* tablet and *Arbudahara* tablet in the adjuvant therapy of squamous cell carcinoma in which 50 patients were allocated randomly into two groups' each containing 25 patients. Group A patients were treated with chemotherapy and radiotherapy along with *Amrutadi* tablet and *Arbudahara* tablet in dose 2 tablets four times per day (each tablet of 500 mg) for the period of 8 weeks for both the tablet while in Group B (Control group) patients receiving Chemotherapy and Radiotherapy were observed.

After completion of study it was observed that in Group –A results were statistically highly significant in Ulceration in mouth, Trismus, Weight loss, pain in oral cavity, dysphagia, fatigue, nausea and vomiting, diarrhoea, anorexia, irregular bowel habit and flatulence and insignificant in constipation 60 % had moderate improvements and 30% were found mild improved while in Group – B, Results were statistically insignificant in all symptoms during observation, 73.3% of patient had increased symptoms which suggest that ayurvedic approach gives better result if added to main line of treatment.^[23]

More et al reported a trail to the effectiveness of *Matra Basti* in reducing systemic chemotherapeutic adverse effects. Patients received chemotherapy intra-venously was enrolled to trail after their written. For three consecutive treatment cycles, observations were made. A total of 40 patients were enrolled, and they were split into two groups at random.

Patients in Group A (Standard Control) receiving chemotherapy and customary adjuvant 20 patients in total were recorded in this group, of whom 18 had finished the entire course of therapy; Group B (Study group) patients received chemotherapy in addition to standard adjuvant therapy and *Matra*

Basti. Matra Basti showed more promising results in side effects of chemotherapy anorexia and generalized weakness. It was advantageous because there were no treatment changes and the patients' nutritional state was also preserved.^[24]

3.Ahara: In order to achieve harmony, Ayurveda awakens the body's intrinsic intellect. Ayurveda indicate that intake of single food or *Rasa* (taste) is healthy to all individuals. It depends on many factors like time, type of work, digestive fire, season etc. In Ayurveda literature six major tastes are recommended in every diet – sweet, sour, salty, pungent, bitter, and astringent. Each of them possesses their own contribution to maintain health of individual. Tastes have specific health-giving effects.

Dietary habit is one the major cause for initiation of cancer. About 30–35% of cancer fatalities are attributed to poor diet, inactivity, and obesity.^[25] Diets with less amount of vegetables, whole grains and highly processed foods are more prone to cancer whereas diet large amounts of vegetables, pulses, fruits, grains, and herbs are at a decreased risk of cancer of many organs.^[26] Vegetables and fruits and are rich in antioxidants, such as vitamins C and E, and carotenoids that protect cells from oxidative stress and damage. Dietary fibre, found in whole grains, fruits, and vegetables, has been shown to have anti-cancer properties by reducing oxidative stress and inflammation in the body, and by promoting healthy gut bacteria.^[27] Dietary modifications are an important aspect of cancer management.

It has been demonstrated that a diet high in fruits, vegetables, whole grains, and lean protein improves general health in cancer patients and lowers the chance of recurrence. On the other hand, a diet high in processed foods, sugar, and fat has been linked to a higher risk of cancer.^[28] Fresh, invigorating foods known as *Sattvic* foods include milk, cereals, pure fruit juices, butter, fresh cheese, fresh nuts, seeds, sprouts, honey, and herbal teas. *Sattvic* foods also have an anti-cancerous quality.^[29] Several foods can both prevent and slow the growth of tumours. Beet juice and soup with raw beets, herbs, and carrot juice have anti-carcinogen qualities. Raisins soaked in water, red beets, and beet juice purify the liver.^[30]

It has been demonstrated that eating cruciferous vegetables, such as cabbage, broccoli, Brussels sprouts, and cauliflower, has cancer-preventing properties in both humans and test animals. Numerous other regularly eaten edible mushrooms can also help avoid cancer. *Phyllanthus emblica* Linn. or *Emblica officinalis* Gaertn., both contain phyto-chemicals with anticancer properties, including prodelphinidins B1 and B2, corilagin, geraniin, gallic acid, ellagic acid, pyrogallolsome nor-sesquiterpenoids, and gallic acid and ellagic acid.

Citrus fruits have the power to directly interact with malignant cells and have the ability to strengthen the anticancer effects of other phyto-chemicals found in food. Procyanides or the polyphenols found in grape seeds have been demonstrated to have anticancer or anticarcinogenic properties. In vitro experimental studies also confirmed the anticancer properties of numerous other fruits, including black plum (*Eugenia jambolana* L.), jackfruit (*Artocarpus heterophyllus*), mango (*Mangifera indica* L.), plum (*Prunus domestica*), pineapple (*Ananas comosus*), papaya (*Carica papaya*), pomegranate (*Punica granatum*), strawberry, watermelon (*Citrullus lanatus* T.).^[31]

There is evidence that many spices, including turmeric, red chilli, coriander, cumin, ginger, and mint, can treat everything from malignant tumours to the ordinary cold and cough. Some spices are abundant sources of flavonoids, which can prevent the development of cancer. List of certain food ingredients with their proven anti cancerous property is mentioned in [Table 2].

Table 2- Food Articles possessing Anti-cancerous properties

S.N.	Food article	Properties
1.	Garlic (<i>Allium sativum</i>)	Contains <i>allicin</i> , which has been demonstrated to have anti-cancer properties, especially in protection against colon, stomach, and lung cancer ^[32]
2.	Spinach (<i>Spinacia oleracea</i>)	Rich in lutein and zeaxanthin, antioxidants that possess anti-cancer effects, useful in protection from breast and ovarian cancer ^[33]
3.	Tomato (<i>Solanum lycopersicum</i>)	Enriched with lycopene, an antioxidant that has been shown to have protective effects against prostate, lung, and stomach cancer. ^[34]
4.	Carrot (<i>Daucus carota</i>)	Rich in beta-carotene, an antioxidant that has been shown to have protective effects against several types of cancer. ^[35]
5.	Broccoli (<i>Brassica oleracea</i>)	Contains sulforaphane, a substance that has been shown to have anti-cancer effects on many cancer cell types. ^[36]
6.	Green Tea	Possibility of reduction of risk of breast cancer on higher consumption of green tea ^[37]
7.	Buttermilk	Contains probiotics, which helps to maintain healthy gut microbiome which reduced the risk of gut cancer and several other diseases. ^[38]
8.	Karela (<i>Momordica charantia</i>)	Improve cancer preventive mechanism of body. Pure forms act as therapeutic agents with conventional therapy for additional management of cancer. ^[39]
9.	Lauki /Bottle guard (<i>Lagenaria siceraria</i>)	Contains compound cucurbitacin B which leads to the triggering of cell cycle arrest and apoptosis (programmed cell death) in cancer cells, suggesting it possess potential anti-cancer properties. ^[40]

4.Achaar: Westernization in lifestyle and involvement of technology has gifted mankind this deadliest gift. Movement of human beings from active lifestyle to passive led to birth of many untreatable conditions. Cancer is one of them which not only weaken the physical but also make an individual deprived of mental illness. *Achaar* is fourth pillar to eliminate the causative factor for any illness.

This includes the principles, rules and regulation which create a disciple in physical and mental and impowers the self to prevent from illness. It includes measures for both who are suffering from any illness and who are healthy. *Acharya Charaka* has described *Achaar Rasayana* which empowers mentally, physically, and spiritually. *Achaar Rasayana* is a code of healthy socio-behavioural conduct, which includes worshipping Gods (which enhances personality, or *Sattva*), showing respect to elders and capable people, speaking the truth, avoiding wrath, and abstaining from excessive alcohol consumption, sex, and keeping self-peaceful, not speaking harshly, and enchanting *Mantra*, *Japa*, goodness to all living things, adequate rest, regular consumption of milk, ghee, and other nourishing foods, being gentle and modest and acting honourably, and studying sacred literature [Table 3]. Physical workout or exercise also pretends to be helpful in reducing the risk of cancer and enhancing cancer patients' life. Exercise has been shown to reduce fatigue, improve physical function,

and increase overall well-being. Secondly, Stress has been shown to negatively impact the health of cancer patients, leading to increased fatigue and decreased quality of life. Stress-reducing techniques, such as yoga, meditation, and mindfulness, have been found to be effective in managing stress and improving the overall well-being of cancer patients Adequate sleep is important for the health of cancer patients.

Poor sleep has been associated with increased fatigue and decreased quality of life, while good sleep has been shown to improve physical and mental health.^[41] By taking these steps, a person can be free from mental problems, lead a life that is less stressful, and preserve the effectiveness of these defence systems, which helps to avoid cancer. Putting this into practise also aids in avoiding stimuli or situations that interfere with biological rhythms or emotional equilibrium. *Rasayana* not only addresses physical illnesses, but also has a comprehensive understanding of psychological illnesses. *Rasayana* additionally provides *Shrestha Dhatu*, *Shrestha Buddhi*, *Medha*, and *Smriti*. The original and only *Samhitakar*, *Charaka*, is credited with developing the novel idea of *Achaar Rasayana*.^[42] In other words, it can also be regarded as immunotherapy (*Rasayana Prayoga*) forms an important part of cancer treatment for revitalising the body's support systems. Yoga and meditation help people unwind mentally and physically, which boosts their immune systems' capacity to fight cancer.

Table3–Activities/Article possessing Anti-cancerous Property

S.N.	Activity	Properties
1.	Sleep	Study concluded that short sleep cycle increases risk of cancer in Asians while long sleep increase risk of colorectal cancer ^[43]
2.	<i>Mantras</i>	Cancer survivors' quality of life is reported to be improved without damage by practising <i>mantra</i> meditation or listening to music for 12 minutes each day. ^[44]
3.	Milk	Contents like calcium and linoleic acid (CLA) may act as shield against cancer or may have anti-cancer properties. ^[45]
4.	<i>Goghrita</i>	Possess antioxidant, anti-inflammatory and properties that may aid in preventing the formation and proliferation of cancer cells. ^[46]
5.	Yoga	enhances the patients' quality of life, immune indicators, and physical and psychological symptoms ^[47]

RESULT

Ayurveda is a science of life which has dual aim, prevention of healthy, and cure of diseased. Principle of curing any disease is to maintain the equilibrium of *Doshas*. In case of cancer Ayurveda can act as main therapy as well like an adjuvant therapy along with the management protocol of modern medicine. It has proven results that it reduces the complications and risk associated with chemotherapy and radiotherapy which enhances the life's quality of the cancer patients. *Ayurveda* also state the principles of, prevalence and mortality of cancer can be reduced if modification is made in daily routine life. *Samshodhana* helps an individual to eliminate toxins/carcinogens out of body or can suppress them in the body through the *Samshamana*. *Ahara* (diet) and *Achaar* (lifestyle) also play an important place in treating cancer. Consuming a diet full of lean protein, whole grains, and fruit and vegetables, and, and reducing the consumption of processed foods, sugar, and fat, has been shown to improve the overall health of cancer patients and reduce the risk of recurrence. The use of certain spices and herbs, such as turmeric and ginger, has also been found to have anti-inflammatory and

antioxidant properties that can help to manage cancer. Incorporating a diet that is in line with Ayurvedic principles, such as consuming warm, cooked foods and avoiding cold and raw foods, can also help to improve the digestion and overall health of cancer patients. Additionally, a diet that is low in fat and high in fibre can help to reduce the risk of cancer and improve the overall well-being of patients. Healthy dietary follows up according to *Prakriti*, *Desh* and *Kaala* provide immense *Bala* and *Poshana* to all the *Dhatus* of body. Therefore, it has curative properties by boosting cancer results, supporting properties for allopathic treatments to lessen side effects and enhance quality of life, and prophylactic properties for cancer prevention by including hygiene, *Ahara* (diet), and *Vihara* (lifestyles). Palliative in nature by offering a huge source of numerous pharmacological classes to boost immunity (*Ojas*).

CONCLUSION

Adopting these Ayurvedic principles can enhance a patient's health and act as a complement to chemotherapy and radiation treatment, which can prolong a person's life and improve their quality of life. Most commonly, all the drugs which are used in *Rasayana* therapy can reduce the three *Doshas* or imbalances related to *Vata*, *Pitta* and *Kapha*. Physical activity, stress-reducing techniques, and maintaining healthy sleep patterns have also been found to be beneficial in managing cancer and improving the patient's quality of life. Ayurveda's approach to disease prevention and health promotion considers the entire body, mind, and spirit while sustaining health. Its holistic approach to promoting health and treating ailments is increasingly gaining popularity in many parts of the world. Thus, majorly concept of *Sushruta* to combat cancer need a strong attention, further exploration of Ayurveda can bless the humanity to fight with cancer in easy way.

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