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Review Article

Oncology Section

Bridging Ayurvedic Insights with Modern Medicine Perspectives of *Arbuda* (Tumour): A Comprehensive Review

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ABSTRACT

Ayurveda, the ancient Indian system of medicine, offers a unique perspective on *Arbuda*, correlating them with the condition known as tumours. According to Ayurveda, *Arbuda* arise due to the vitiation of the three *doshas: Vata* (the *dosha* responsible for movement and cognition), *Pitta* (the *dosha* responsible for regulating body temperature and metabolic activities), and *Kapha* (the *dosha* responsible for regulating body fluids and maintaining the cohesion of body constituents). This vitiation disrupts the *Dhatu Pariposhana,* which refers to the body's metabolic and nutritional balance. The concept of *Arbuda*, as detailed in classical Ayurvedic texts, describes as progressively enlarging, globular masses that are fixed to deeper structures, usually non suppurative, and occasionally painful. They can occur in any part of the body, involving the *Mamsa* (muscle) and *Rakta* (blood) *Dhatus* due to the disturbance of the *tridosha*. Factors such as *Mithya Ahara* (improper diet) and *Vihara* (lifestyle) contribute to the vitiation of *doshas* and the subsequent formation of *Arbuda*. The ancient texts also classify *Arbuda* into various types, though there is limited evidence linking Ayurveda's understanding to modern medical concepts of non tumour-forming cancers. However, descriptions of other diseases in Ayurvedic literature bear resemblance to cancer, suggesting that ancient physicians may have recognised the link between *shotha* (chronic inflammation) and malignant tumours. This review presents the existing literature on *Arbuda*, aiming to provide a comprehensive understanding of tumours from an Ayurvedic perspective and to offer integrative approaches for their management and eradication.

Keywords: Ayurveda, Benign, Cancer, Malignancy, Neoplasia

INTRODUCTION

Tumours are characterised by aberrant cell development and the ability to infiltrate or spread to various regions of the body [1]. Benign tumours do not spread to other parts of the body and remain confined to the local region. Although typically considered non threatening, benign tumours can pose significant medical challenges due to their potential to grow and compress adjacent structures, resulting in pain and complications. Common examples of benign tumours encountered in clinical practice include fibroids in the uterus and lipomas in the skin [2]. While they do not metastasise or invade surrounding tissues, their growth can lead to compression of vital structures. For instance, a large benign lung tumour may compress the trachea, leading to respiratory distress and necessitating urgent surgical intervention. Colon polyps are closely monitored due to their propensity to develop into malignant tumours, necessitating timely intervention to mitigate the risk of progression to malignancy [3].

Malignant tumours, commonly referred to as cancerous growths, exhibit unrestrained cellular proliferation and have the capacity to invade adjacent tissues and metastasise to distant sites via the bloodstream or lymphatic system [4]. Metastasis, the hallmark of malignancy, can occur in various organs, with frequent occurrences observed in the liver, lungs, brain, and bone. Early detection of malignant tumours is paramount, as timely intervention offers the best chance for successful treatment outcomes. Surgical resection, often accompanied by adjuvant therapies such as chemotherapy or radiotherapy, remains the primary treatment modality for localised malignancies. However, in cases where metastatic spread has occurred, systemic therapies such as chemotherapy or immunotherapy are indicated to target disseminated cancer cells and control disease progression [5].

The clinical description of *Arbuda* in Ayurveda aligns with the current concept of tumours. However, Ayurvedic texts do not conclusively classify tumours as benign or malignant as defined in modern medicine. Instead, Ayurveda focuses on understanding the underlying causes and imbalances contributing to the development of *Arbuda*. According to Ayurveda, the development of a tumour involves a cycle of aggravation of the three *doshas*, production of digestive toxicity (*Ama*), and deformation of channels (*Srotovaigunya*), leading to improper cell proliferation and the development of *Arbuda* [6]. Additionally, modern medicine experts are increasingly exploring complementary and alternative therapies for tumour treatment [7]. Ayurvedic scriptures describe tumours as either inflammatory or non inflammatory swellings, reflecting the holistic approach of Ayurveda towards understanding and treating such conditions. Ayurveda provides a range of preventive, palliative, supportive, and curative treatments that can be utilised to manage both benign and malignant tumours. These treatments aim to improve life expectancy and enhance the quality of life for individuals affected by tumours [8]. This review provides a comprehensive analysis of both the Ayurvedic and the modern medical perspectives on *Arbuda*, which has not been discussed in previously published articles. The novelty of this review lies in the potential for Ayurvedic principles to complement conventional tumour management, highlighting an integrative and holistic approach to tumour care and patient management.

MATERIALS AND METHODS

The investigation involved searching the online databases PubMed and Google Scholar using the terms "*Arbuda*," "Malignancy," and "Tumour". Thirteen articles were included and comprehensively reviewed. Studies lacking abstracts or presented in languages other than English were excluded, ensuring that only relevant and accessible scholarly works were included. The review encompassed a thorough examination of original articles, case reports, and review articles, specifically focusing on discussions related to the causes and management of *Arbuda*. Data collection was achieved through a review of classical Ayurvedic texts.

DISCUSSION

Causes of *Arbuda* (Cancer)

According to Ayurveda, the principle of *Karmaphala Siddhanta*, which dictates that one reaps the fruits of their actions, is evident in the aetiology of *Arbuda* [9]. Additionally, factors such as ageing, smoking, sun exposure, radiation, chemical exposure, a family history of tumours, alcohol consumption, poor dietary habits, physical inactivity, and obesity are commonly associated with tumour development. Environmental factors also play a significant role, including pollution, excessive sun exposure, radiation, pesticide exposure, chemical carcinogens, arsenic, and other environmental toxins [10].

Pathogenesis (*Samanya Samprapti*) of *Arbuda*

Ayurvedic scholars such as *Sushruta, Vagbhata*, and others have all described very similar concepts regarding the general pathogenesis of *Arbuda*. Their works contribute to the understanding of tumour development according to Ayurvedic principles. *Arbuda* is described in Ayurveda as a round, hard, large, deep-rooted, slowly growing, non suppurating swelling composed of a fleshy mass. It is formed when aggravated *doshas* vitiate the tissues, leading to damage to the inner layer of the dermis (*Rohit kala*), and the development of aberrant blood vessel branches [11]. The primary cause of *Arbuda* is uncontrolled cell and tissue proliferation, resulting in the spread of abnormal growth via the *Rasavahasrotas* (channels carrying nutrient fluids). These abnormal growths can lodge in various organs and systems, giving rise to a diverse array of symptoms. The aggravation of all *doshas*, particularly affecting blood and muscle tissues (*Rakta* and *Mamsa*), results in the derangement of metabolic fire (*Agni*) and the formation of metabolic toxins (*Ama*). *Ama*, in turn, obstructs the channels, leading to the formation of swelling characterised by its round shape, deep embedding, tendency to protrude, and rapid expansion, ultimately culminating in the development of *Arbuda* [12]. Based on the *dosha*, *dhatu*, *sadhyasadhyatava* (prognosis), and *lakshana* (signs and symptoms), *Arbuda* is classified in Ayurvedic texts as shown in [Table/Fig-1] [13].

S. No.	Classification of *Arbuda*	
1	According to *dosha*	a) *Vataja* b) *Pittaja* c) *Kaphaja* d) *Tridosaja*
2	According to *dhatu*	a) *Medajaarbuda* (fatty tissue) b) *Mamsajaarbuda* (muscular tissue) c) *Rakatarbuda* (blood)
3	According to prognosis	a) *Sadhya* (curable) b) *Asadhya* (non curable)
4	According to sign and symptoms	a) *Vrittam* (round) b) *Sthiram* (immovable) c) *Mandrujam* (slightly painful) d) *Unalpa-moolam* (deep seated) e) *Chiravruddhi* (slowly increasing) f) *Apakam* (non suppurating)

[Table/Fig-1]: Classification (*Bheda*) of *Arbuda according* to Ayurveda [13].

Acharya Sushruta also described *Adhyarbuda* (two tumour groups growing simultaneously), *Dwirarbuda* (tumours growing one after another) and *Adhyaarbuda* (tumours growing one after another), which can be correlated with the malignant stage of cancer or cancer metastasis [14].

Clinical Features (*Lakshana*) of *Arbuda*

The clinical features described by *Sushruta* include a spherical shape (*Vrittam*), stability (*Sthiram*), low pain (*Mandrujam*), large size (*Mahantama*), multiple roots (*Analpa-moolam*), slow but consistent progression (*Chiravruddhi*), and failure to reach the maturity stage (*Apakam*) [15].

Ayurvedic Approach in the Management of *Arbuda*

Cancer is one of the leading causes of morbidity and mortality worldwide. Effective drugs and treatment therapies are available for this disease but side-effects are very common [16]. According to Ayurveda, *Arbuda* develops due to *mithyaaharavihar* (unhealthy diet and lifestyle) as per Ayurveda. Most cancer patients use Ayurvedic drugs with the hope of boosting their immune system, relieving pain, and controlling side-effects related to the disease or its treatment. *Chedana* (excision), *Agnikarma* (thermal cauterisation), *Ksharakarma* (caustic therapy), and *Rasayana* (rejuvenation therapy) are suggested modalities for *Arbuda* [17]. Although treatment modalities in Ayurveda may vary according to the types of Arbuda, as shown in [Table/Fig-2] [18].

S. No.	Types of *arbuda*	Treatment
1	*Vataj arbuda*	1. Poultices of *Karkaruka (Cucumis melo), Ervaruka (Cucumis sativus), Narikela (Cocos nucifera), Priyala (Buchanania latifolia),* and *Panchangula (Ricinus communis)* 2. Poultices of *Vesavara* (meat preparation with herbs) 3. Nadi swedana (Fomentation) 4. *Rakstamokshana* (Blood letting) with *Shrunga* (horn). 5. *Virechna* (Purgation) with *Trivrit sneha*
2	*Pittaj arbuda*	1. Gentle sudation 2. *Virechana* 3. Warm poultices 4. Paste application of *Anjana* (Corrylium), *Sarjras* (Oleo gum resin), *Somaraji (Centratherumantihel menthica), Pattanga (Caesalpinia sappan), Aaragvadha (Cassia fistula), Priyangu (Callicarpa macrophylla), Rodhra (Symplocosracemosa), Yashtika (Glycyrrhiza glabra), and Shyama (Ocimum tenuiflorum)* mixed with honey 5. Medicated ghee of *Syama* (*Operculina turpethum*), *Girihva (Symplocos racemosa), Amjanaki, Draksha (Vitis vinifera)*, and *Saptalika (Euphorbia lutescens), Klitaka (Glycyrrhiza glabra)*
3	*Kaphaj arbuda*	1. *Shodhana* (Purification treatment) 2. *Raktamokshana* 3. Poultice of bird excrement, *Kakadani (Cardiospermum halicacabum) root*, and cow urine 4. *Ksharkarma, Agnikarma* and *Chedana* 5. *Asphota (Aganosma caryophyllata), Jati (Jasminum grandiflorum)*, and *Karvi (Strobilanthe scallosa)* decoction for wound dressing 6. *Bharngi (Clerodendrum serratum), Vidanga (Embelia ribes), Patha (Cissampelos pareira),* and *Triphala (Emblica officinalis, Terminalia bellerica, and Terminalia chebula)* oil for wound healing
4	*Medoj arbuda*	1. *Swedana* 2. *Chedana* and *Sivana (Suturing)* 3. *Karanja (Millettia pinnata)* oil with honey for wound dressing 4. *Haridra (Curcuma longa), Rodhra, Manassila (realgar)*, and *Ela (Elettaria cardamomum)* for wound dressing

[Table/Fig-2]: Treatment modalities for *Arbuda* management according to types [18].

Modern Medicine Approach in the Management of Tumour

Surgical excision or conservative treatment may be sufficient for benign tumours, with further attention typically not necessary. Treatment options, such as cryotherapy, curettage, or electrodesiccation, vary depending on the type and location of the common benign skin tumours [18]. Oncology, the branch of modern medicine that deals with malignant tumours, employs surgical excision, palliative care, chemotherapy, radiation therapy, and hormone therapy in the management of malignant tumours [19]. Often, multiple treatment modalities are used to manage and prevent the recurrence of malignant disease [20].

Systematic randomised trials have shown that combination chemotherapy with cisplatin, etoposide, and bleomycin (PEB) is the standard treatment for testicular cancer. However, long-term complications include secondary leukaemia, therapy-related solid tumours, nephrotoxicity, neurotoxicity, pulmonary toxicity, vascular toxicity, and infertility. Patients receiving cisplatin-based chemotherapy have an increased risk of second non germ cell malignancies, especially when combined with radiation therapy. Approximately 25% of patients experience azoospermia 2-5 years

post-treatment. Vascular toxicities include Raynaud's phenomenon, acute myocardial infarction, and cerebrovascular events, with bleomycin and cisplatin being significant contributors. Peripheral neuropathy is the most common neurotoxicity, linked to high doses of cisplatin, the use of vinblastine, and Raynaud's phenomenon. Cisplatin also causes significant nephrotoxicity. Anthracycline-induced cardiotoxicity remains a concern, with the incidence of heart failure increasing dose-dependently [21,22].

Radiotherapy, used alone or in combination with chemotherapy, also presents significant long-term complications. These include secondary malignancies, cardiovascular diseases, pulmonary fibrosis, and endocrine dysfunction. The risk of secondary cancers increases with higher doses and larger treatment fields. Cardiovascular complications can result from radiation-induced damage to the heart and blood vessels, leading to conditions such as coronary artery disease and heart failure. Pulmonary fibrosis is a common outcome of thoracic radiation, causing chronic respiratory issues. Endocrine dysfunctions, particularly thyroid and gonadal dysfunctions, are prevalent due to radiation exposure to endocrine glands [23].

In contrast, Ayurveda offers a holistic approach to tumour management that emphasises not only the eradication of the tumour but also the restoration of the body's overall balance and health. Ayurvedic treatments, which include herbal formulations, dietary modifications, lifestyle changes, and specific therapeutic procedures like *Panchakarma*, aim to address the root cause of the disease by balancing the *doshas* and eliminating toxins (*Ama*) from the body. This approach is believed to result in fewer side-effects and improved overall wellbeing [24].

Ayurvedic therapies such as *Rasayana* (rejuvenation therapy), *Chedana* (excision), *Agnikarma* (thermal cauterisation), and *Ksharakarma* (caustic therapy) are used according to the individual's constitution and the specific type of *Arbuda*, potentially offering more personalised and effective treatment options [25]. Additionally, Ayurveda's emphasis on prevention and holistic health can complement modern treatments, reducing side-effects and enhancing recovery.

Studies have shown that integrating Ayurvedic principles with conventional cancer treatments can lead to better patient outcomes, improved quality of life, and reduced treatment-related toxicity [26,27]. This integrative approach could provide a more balanced and comprehensive strategy for managing both benign and malignant tumours, addressing the limitations of modern medicine while leveraging the strengths of traditional Ayurvedic wisdom.

Exposure to ionising radiation disrupts the balance of *tridoshas*, leading to radiation sickness and mortality. Ayurvedic *Rasayana* drugs like *Amritaprasham*, *Ashwagandha Rasayana*, *Brahma Rasayana*, *Chyavanaprasha*, *Narasimha Rasayana*, and *Triphala* are reported to have radioprotective effects. These formulations scavenge free radicals, increase antioxidant enzymes, and inhibit lipid peroxidation. For instance, studies have shown that *Brahma Rasayana* scavenges Fe2+-ascorbate-induced lipid peroxidation, while *Triphala* increases glutathione levels and antioxidant enzymes, protecting against oxidative stress. *Triphala has* also demonstrated a reduction in radiation-induced DNA strand breaks in leukocytes and splenocytes of mice exposed to 7.5 Gy of whole-body irradiation, highlighting Ayurveda's potential in mitigating radiation-induced damage [28].

CONCLUSION(S)

Malignant tumours continue to pose a significant health challenge globally, with modern medicine making considerable strides in elucidating their molecular underpinnings and developing effective treatments. Despite these advances, complete eradication and management of malignant tumours remain elusive, often complicated by severe side-effects. Ayurveda, with its holistic approach, offers a comprehensive understanding of life, health, and disease, including the conceptualisation and management of *Arbuda*. The integration of Ayurvedic principles with modern medical practices has the potential to enhance patient care by offering complementary strategies that may improve quality of life and treatment outcomes. Future research and clinical trials exploring this integrative approach could lead to more effective, holistic, and patient-centered cancer care.

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