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Exploring Traditional Approaches to Tumor Management: Insights from Ayurveda and Sri Lankan Traditional Medicine

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Abstract

For numerous decades, indigenous cultures worldwide have used traditional herbal medicine to treat a mass of diseases, including tumors. Among the specialties of traditional medicine, "Gedi-Vaṇa-Pilikā" (Oncology) is a specialization practiced for several generations. Since 1879, certain books have been written in Sri Lanka on traditional medicine which abundant in mineral, herbal medicines for tumor. Approaches based on traditional medicine systems are necessary to further explore tumor management to reduce the gap between modern understanding and traditional concepts. Therefore, a brief review of some of the significant features used in Ayurveda and traditional medicine was given to understand the principles behind tumor management. The data were gathered through traditional medical texts in Sri Lanka, authentic Ayurveda texts and scientific reviews. In Sri Lankan traditional medicine, "Pilikā, gadu, odu, gedi, vishādi, vaṇa are the main terms used to designate the tumor. Caraka and Suśruta Samhitā described inflammatory or non-inflammatory swelling and referred to these as either Granthi (minor neoplasm) or Arbuda (major neoplasm). Malignant tumors (raised from Tridosaja) are harmful because all these tumors in the body capable to damage the tissues resulting from death. Literary texts reveal the varieties of several tumors (Kandamālā, Kalal gadu, Gal ratha, Pokuru visādi, Sanni visappu, Atapalā gadu etc.) according to their site, etiology, and morphology. In this review, the number of plants with tumor control properties has been reported and commonly used plants have been identified in traditional literature. Various types of dosage forms such as ointments, juice, decoction, paste are used for tumors. Novel research findings have proven that most of herbal remedies assist in the deduction of cytokines and activation of antigen-presenting cells in the tumor or leading to induce the apoptosis of the tumor cells. As a conclusion these traditional medicine approaches should be further assed by scientific based researches protocols and more research is required to determine phytochemistry of the plants which describe in the texts with the aim of developing novel drugs to cure tumors.

Key Words: *Ayurveda, Gedi- Vaṇa -Pilikā, Traditional Medicine in Sri Lanka, Tumor*

1. Introduction

Tumors, or neoplasms, represent abnormal growths of cells that can occur in various tissues or organs throughout the body. They are characterized by uncontrolled proliferation and can be benign or malignant. The global prevalence of tumors is substantial, with millions of new cases diagnosed each year. In Sri Lanka, tumors pose a significant health burden, contributing to the country's disease profile. According to the World Health Organization (WHO), cancer is a leading cause of morbidity and mortality worldwide, with an estimated 19.3 million new cases and nearly 10 million deaths in 2020 alone (WHO, 2021). In Sri Lanka, cancer incidence rates have been steadily increasing over the years, with notable prevalence among both males and females (Fernando et al., 2020).

Traditional medicine, with its roots entrenched in ancient practices such as Ayurveda, holds a treasure trove of wisdom when it comes to managing external tumors through a diverse array of medications. Texts like the *Sushratha Samhitā* serve as invaluable repositories of knowledge, offering a holistic perspective on the treatment of cysts and tumors (Bhishagratha, 1991; Kolombage, 2005). In this review, we embark on a journey to explore the traditional approaches to external tumor management, delving into the interconnectedness of doshas and the profound significance of herbal, animal, and mineral-based remedies (Ponnamperuma, 2004; Perera, 2019).

The therapeutic approach of Ayurveda has been di-vided into four categories as *Prakritisthāpana chikitsā* (health maintenance), *Rōganāshani chikitsā* (disease cure), *Rasāyana chikitsā* (restoration of normal function) and *Naishthiki chikitsā* (spiritual approach) (Thatte & Dhahanukar 1991). *Ksataja visarpa*, *Agni Visarpa*, and *Karadama Visarpa* stand as the primary types of tumors known to potentially lead to cancer formation (Ambatalawa, 2005). Left unchecked, these tumors can escalate into malignancies, posing grave risks to health and ultimately leading to death (Prasad, 1997; Sastry, 2011; Ambatalawa, 2005).

According to local medical texts, *arbuda* can be likened to a fleshy lump gradually enlarging and sprouting roots due to *vāta* dosha irritation, encasing the flesh and causing mild pain (Singh, 2002). *Upachikā* a type of *gadu*, extends high like a *tumbasa* (ant hill) in the veins, known as Manya, akin to *Gandamālā. Vidradhi*, whether internal or external, represents a form of cancer, further categorized into *Sthanavidradi* and *Rakta Vidradi*. Pilika, similarly divided into internal and external variants, can afflict eight anatomical sites including the anus, abdomen, pelvis, thigh, navel, kidney, heart, and chest. Traditional medicine addresses these various forms of cysts under the umbrella term "*gedi cikitsā*" highlighting its holistic approach to treatment.

Moving forward, efforts should be made to validate the efficacy and safety of traditional herbal remedies through rigorous scientific research and clinical trials. Collaboration between traditional healers, scientists, and healthcare professionals is essential to bridge the gap between traditional and modern medicine and harness the synergistic potential of both systems. By embracing the wisdom of traditional

medicine and integrating it with modern scientific knowledge, we can optimize tumor management strategies and improve outcomes for patients worldwide.

This review endeavors to uncover the local terminologies used to describe tumors, elucidate their distinct characteristics and associated symptoms, comprehend the trajectory of tumor growth as described in traditional systems, explore the significant features of tumor management in traditional medicine, and identify the most common plant varieties utilized in tumor management.

The traditional management of tumors in Sri Lankan traditional medicine offers valuable insights into alternative approaches to cancer care, rooted in centuries-old wisdom and empirical observations (Perera, 2019). By bridging the gap between traditional knowledge and modern science, there is immense potential to harness the therapeutic benefits of plant-based remedies and indigenous healing practices for the prevention and treatment of tumors. Further research, collaboration, and integration of traditional medicine into mainstream healthcare are crucial steps towards achieving holistic and inclusive cancer care for all.

This review aims to achieve the following objectives: to review and document the traditional terminologies and classifications of tumors in Sri Lankan traditional and Ayurvedic medicine, to identify and compile the most commonly used herbal, animal, and mineral-based remedies for tumor treatment as described in traditional texts, and to emphasize the importance of integrating traditional knowledge with modern scientific research to validate the efficacy and safety of these remedies. By doing so, the article seeks to highlight the potential of traditional medicine in contributing to contemporary oncology and improving patient outcomes.

2. Materials and Methods

A comprehensive literature review was conducted to gather information on the traditional concept of tumors. The data collection process involved several key sources:

1. Traditional Medical Texts in Sri Lanka: A thorough examination of traditional medical texts, including "*Thalpathe piliyam*," "*Gedi vana cikitsā samgraha*," "*Sinhala vaidya vidyā*," and "*gedi veda potha*," provided valuable insights into the indigenous understanding and management of tumors in Sri Lankan traditional medicine.
2. Authentic Ayurveda Texts: The study also incorporated authentic Ayurveda texts, including those from the "*vriddatrayī*" and "*laghutrayī*" collections. These ancient texts, renowned for their comprehensive coverage of Ayurvedic principles and practices, offered additional perspectives on tumor management strategies.
3. Scientific Reviews on Traditional Tumor and Cancer Management: A review of scientific literature spanning the years 1995 to 2020 was conducted to identify relevant studies on traditional tumor and cancer management practices. This included research articles, reviews, and meta-analyses that explored traditional approaches to tumor treatment and their efficacy.

Furthermore, a systematic literature review utilizing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) model was undertaken to identify the most common herbal materials utilized in tumor management within the framework of Sri Lankan traditional medicine. This rigorous methodology ensured a comprehensive and structured analysis of the literature sources pertaining to tumor management, facilitating the identification of key herbal remedies and treatment modalities. The findings of this systematic review were meticulously analyzed and summarized to provide a comprehensive overview of traditional tumor management practices in Sri Lanka

3. Results and Discussion

A staggering array of 4448 tumors, spanning from head to toe, have been documented, each meticulously categorized based on individual characteristics and condensed into forty-eight distinct types (Kolombage, 2005) (Table 1). When symptoms manifest, the initial course of action involves internal cleansing using specific medicinal formulations to purify the body. Subsequently, external treatments are administered to address the identified tumors. These therapeutic interventions encompass a diverse range of ingredients, incorporating botanical, zoological, and mineral substances to combat the ailment effectively (Table 1) (Gunasena, 1961; Kolombage, 2005; Ambatalawa, 2005).

3.1 Characteristics of common tumors and their symptoms

Table 01. Characteristics of common tumors and their symptoms mentioned in the texts

Location	Tumor	Characteristics	Symptoms
Head	*Humbas Bandana*	Tumor associated with fever	Headache, fever, edema in cheeks and head
	Nalal gadu	Size of brinjal fruit	Red eyes, excessive tearing
	Nahadadu pilikā	Size of a mug bean	Inflammation in the nose
	Bema pilikā	Size of an orid seed	Blindness within a week
	Haku pilikaā	Size of a rice	Tenderness of mandible
	Kandamālā gadu	Associated with buccal area	Stiffness of jaw, tearing, salivation
	Kanaka visādi	2 tumors associated with throat	Fatal, throat pain, edema in ear
	Dantha pilikā	Arise in mouth and associated with gums and teeth	Pain, mood changes
Upper limb	*Urabāhuwa*	Tumors in shoulder	Fever, impairment of moments in arm
	Konadara gadu	Size of a lemon fruit	Pain

	Amākara gadu	Tumors can be seen in dorsal side of hand	Fever, Abnormilities of fingers
	Deva akārama	39 Tumors can be seen in dorsal side of hand	Fever, Abnormilities of fingers
	Sanni visappu	Pair of two tumors	Edema in hand, talkativeness, distress, unconsciousness
	Katu pilikā	Arise in almost all fingers	Fever, dysfunction of hand
Thorax	*Ila peliyāwa*	4 tumors arise from rib cage	Fatal
	Sanni visādi	Associate with chest and back side of the body	Fever, pain in joints, talkativeness, distress
Abdomen and pelvis	*Kalal bandana*	Associate with 2 inches downwards to lower abdominal margin	Urine retention, tiredness, hiccups
	Ikili gadu	Groin region	Lower abdominal pain
Whole body	*Pokuru visādi*	Arise 64 tumors all over the body	Fever, pain in all over the body, fatal
	Deva amākara	Arise 39 tumors in one site	Fever, pain in all over the body
	Sanni musappu	Arise in joints	Burning sensation, disability in limbs

3.2 Modern equivalent for tumors mentioned in traditional medicine

In the traditional system of medicine, tumors are described using specific terms that convey their nature and characteristics. These terms often have equivalents in Western medicine, providing insights into the understanding of these conditions across different medical paradigms.

One such term is "*vidradi*," which corresponds to abscesses in Western medicine. These localized collections of pus represent an inflammatory response to infection or injury and are commonly treated through drainage and antibiotics (Kolombage, 2005).

Similarly, the terms "*Gada*," "*Gadu*," and "*Gedi*" are used to denote various types of tumors in the traditional system, and they are equated with abscesses in Western medical terminology. Abscesses, characterized by localized swelling and inflammation, can arise from bacterial infection or other inflammatory processes and may require surgical intervention or antibiotic therapy for resolution (Kolombage, 2005).

In contrast, the term "*pilikā*" in the traditional system refers to cancerous tumors. Unlike abscesses, which are primarily inflammatory in nature, cancerous tumors

involve uncontrolled cell growth and have the potential to metastasize to other parts of the body. Treatment for cancerous tumors typically involves a multidisciplinary approach, including surgery, chemotherapy, and radiation therapy, aimed at removing or destroying cancer cells while minimizing harm to healthy tissues (Gunasena, 1961).

Furthermore, traditional descriptions of tumors often distinguish between inflammatory and non-inflammatory swelling, categorizing them as either "Granthi" (minor neoplasms) or "*Arbuda*" (major neoplasms) (Bhishagratha, 1991). While minor neoplasms may be benign and localized, major neoplasms can be malignant and pose a greater risk of tissue damage and systemic effects. (Balachandran & Govindarajan, 2005; Sharma, 1981).

It is important to note that malignant tumors, which arise from an imbalance of the three doshas (Tridosaja), are particularly concerning due to their potential for widespread harm and even death (Singh, 2002). These tumors require prompt and aggressive treatment to prevent further progression and complications.

By understanding the traditional terms used to describe tumors and their corresponding equivalents in Western medicine, healthcare providers can bridge the gap between different medical systems and develop comprehensive treatment strategies tailored to individual patient needs. This holistic approach acknowledges the rich diversity of medical knowledge and practices while striving for optimal patient outcomes.

Due to identical physical and physiological traits tumors recorded in traditional literature are most similar to the types of tumors mentioned in modern medicine and still prevalent today (Table 2) (Prasad, 1987; Singh, 2002; Kolombage, 2005; Mishra, 2018).

Table 02. Modern equivalent for tumors mentioned in traditional medicine

Term used in traditional medicine	Modern equivalent
Sanni Pilikā / Isa Pilikā/ humbasvidura	Brain tumors
Udara Pilikā	Gastrointestinal cancers
Pith Pilikā	Hepatobiliary cancer
Kusa pilikā, vasthyārbuda	Uterine cancer
Ugure Gadu	Esophageal cancer
Etapalā gadu	Osteosarcoma / Chondrosarcoma
Asthi Pilikā	Bone cancer of spine
Kandamālā gadu	Thyroid cancer
Prameha Pilikā	Prostate cancer / Bladder Cancer
Haku Pilikaā	Cancers of oral cavity
Jihvārbuda	Cancer of tongue
Lōchanārbuda	Leukemia
Kalsunātika gadu	Oral tumors in upper palate
Thunkīra gadu	Oral tumors in lower palate

Kantasāluka gadu	Oro- Phalangeal cancer
Seemasagātha/ thāluka sōsa gadu	Buccal cancer
Kantatha gadu/ jihvāmūla pilikā	Base of the tongue
Sthana vidradhi / surāsurapilikā	Abscess on the Brest
Raktārbudha	Angioma
Mamsārbudha	Myoma
Asthyārbudha	Osteoma
Vātārbudha/ snāyu pilikā	Neuroma
Kustārbuda	Melanoma and other skin cancers

The traditional system of medicine, deeply rooted in cultural practices and indigenous knowledge, offers a rich tapestry of botanical remedies for various ailments, including tumors. Across regions like Sri Lanka, where traditional medicine holds significant sway, local names for plants are intricately woven into the fabric of healthcare practices. These plants, with their Sinhala names, harbor potent therapeutic properties that have been harnessed for centuries to manage tumors afflicting different parts of the body, from the head and neck to the upper and lower limbs. In this compendium, we unveil the scientific identities of these botanical treasures, shedding light on their potential roles in tumor management within the context of traditional healing practices (Prasad, 1997). By bridging the vernacular with the scientific, we aim to enhance understanding and appreciation of the intricate relationship between traditional botanical knowledge and modern medical science in the pursuit of holistic healthcare solutions.

3.3 Local names for commonly mentioned plants for management of tumors originated in different body parts

In this review, a comprehensive analysis of traditional medicinal plants used for tumor management was conducted by referencing multiple authoritative sources, including Fernando et al. (2016), Kolombage (2005), Mishra (2018), and the "*Thalpathe Piliyam*" volumes 3, 6 and 7 (1992). The plants were categorized based on the traditional terms used for tumors in Sri Lankan medicine and separated according to specific body parts. This approach facilitated the identification of the most frequently mentioned plant parts for tumor management. Notably, the analysis revealed a significant overlap in the plant varieties recommended across different sources for treating tumors in specific body regions. This convergence of data underscores the reliability and consistency of traditional knowledge in tumor management. The findings highlight the potential of these traditional remedies, which have been validated across various texts, to be further investigated for their therapeutic efficacy. By aligning traditional wisdom with modern scientific research, these plants could play a crucial role in developing effective, holistic cancer treatments (Table 3) (Fernando et al., 2016; Kolombage, 2005; Mishra, 2018; *Thalpathe piliyam*, 1992).

Table 03. Local names for commonly mentioned plants for management of tumors originated in different body parts

Body part	Local name of plant	Scientific name of plant
Head and neck	*Ahela Dalu*	Young leaves *Cassia fistula.*
	Amukkarā ala	Rhizome of *Withania somnifera*
	Attana pothu	Bark of *Datura metel*
	Attikka kiri	Latex of *Ficus racemosa*
	Awariya kola	Leaves of *Indigofera Tinctoria*
	Dummella kola	Leaves of *Gymnopetalum scabrum*
	Gammiris	Seeds of *Piper nigrum*
	Gon kekiri kola	Leaves of *Cucumis maderaspatanus*
	Heen thambala Kola	Leaves of *Carmona retusa*
	Heeressa palu	*Cissus quadrangularis*
	Iramusu	*Hemidesmus indicus*
	Iriwēriya	*Plectranthus zatarhendi*
	Kaluduru	*Nigella sativa*
	Kotadimbulā	*Ficus hispida*
	Kukurumān pothu	Bark of *Catunaregam spinosa.*
	Murngā pothu	Bark of *Moringa oleifera*
	Nelum ala	Rhizome of *Nelumbo nucifera*
	Nika pothu	Bark of *Vitex negundo*
	Nitul	*Plumbago indica*
	Rukattana kiri	Latex of *Alstonia scholaris*
	Sewendarā	*Vetiveria zizanioides*
	Siviya	*Piper chuvya*
	Sūduru	*Cuminum cyminum L.*
	Velmī	*Glycerrhiza glabra*
Upper limb	*Madatiya kola pothu*	Bark and leaves of *Adenanthera pavonina*
	Thraṇa kola pothu	Bark and leaves of *Agropyron geminatum*
	Daluk palu	*Euphorbia antiquorum*
	Divi kaduru	*Cerbera dichotoma*
	Ela bin thamburu	*Ipomoea pes-caprae*
	Erabadu pothu	Bark of *Erythrina variegate*
	Gansuuriya pothu	Bark of Thespesia populnea (L.)
	Habarala ala	*Alocasia macrorrhizos*
	Hāthāwāriya ala	Rhizome of *Asparagus falcatus*
	Heenati haal	*Seeds of Oryza sativa*
	Kaladuru ala	Rhizome of *Cyperus rotundus*
	Igini eta	Seeds of *Strychnos potatarum.*
	Karanda mul	Roots of *Pongamia pinnata*

	Kīkirindiya	*Eclipta prostrata*
	Kumburu eta	Seeds of *Caesalpinia bonduc*
	Mukunuwenna	*Alternanthera sessilis*
	Niyagalā ala	Rhizome of *Gloriosa superba*
	Penela kola	Leaves *of Cardiospermum halicacabum*
	Pitawakkā	*Phyllanthus niruri*
	Sebō pathra	Leaves of *Achyranthes acuminata*
	Tibbatu kola	*Leaves of Solanum torvum*
	Vellangiriya	*Capparis zeylanica.*
Lower limb	*Ankenda*	*Acronychia pedunculata*
	Bakmee	*Nauclea orientalis*
	Inguru	Rhizome of *Zingiber officinale*
	Katupila kola pothu	Leaves and bark of *Securinega leucopyrus*
	Kekuna	*Canarium zeylanicum*
	Kowakkā	*Coccinia grandis*
	Kudumirissa	*Cranzia aculeata*
	Kumburu eta	*Seeds of Caesalpinia bonduc*
	Magul karanda	*Cajum pinnatum*
	Nedun	*Pericopsis mooniana*
	Niyagalā ala	Rhizome of *Gloriosa superba*
	Pus eta mada	Seeds of *Entada cirrhosa*
	Sudulūnu	*Allium sativum*
	Tharana kola	*Leaves of Tarenna asiatica*
	Val habarala ala	*Rhizome of Alocasia macrorrhizos*
	Velkahambiliyā	*Croton urens*
	Vellangiriya kola	*Leaves of Capparis zeylanica*
	Welpenela kola	*Leaves of Cardiospermum acuminatum*
Whole body	*Andara*	*Dichrostachys cinerea*
	Attana dalu	Young *leaves of Datura metel*
	Damba	*Paretroplus damii*
	Dehi	*Citrus aurantiifolia*
	Dodam	*Citrus aurantium*
	Domba	*Calophyllum inophyllum*
	Edaru	*Ricinus communis*
	Erabadu	*Erythrina variegata*
	Gorakā	*Garcinia quaesita*
	Hingu	*Ferula asafoetida*
	Kaluduru	*Nigella sativa*
	Kapu	*Gossypium herbaceum*
	Kotta pol	*Dried fruit Cocos nucifera*
	Lunuwarana	*Crateva adansonii*
	Ma nuga	*Ficus benghalensis*
	Maila	*Bauhinia racemosa*
	Milla pothu	Bark of *Vitex altissima*

	Nā pothu	*Bark of Mesua ferrea*
	Nāpiriththa dalu	*Young leaves of Dipterocarpus zeylanicus*
	Olinda	*Abrus precatorius*
	Pinna	*Clerodendrum infortunatum*
	Potā kola	Leves of *Centella asiatica*
	Sapumal	Flowers of *Michelia champaca*
	Siyambalā dalu	Young *leaves of Tamarindus indica*
	Suuduru	*Cuminum cyminum*
	Thala	Seeds of *Sesamum indicum*
	Thampalā	*Amaranthus viridis*
	Thotila pothu	Bark of *Oroxylum indicum*
	Tippili	*Piper longum*
	Yakināran	*Atalantia ceylanica*

Each of these plant varieties possesses unique therapeutic properties, ranging from anti-inflammatory and antioxidant effects to immune-modulating and anti-tumor activities. By harnessing the healing potential of these botanical agents, traditional healers are able to provide holistic and personalized treatment approaches tailored to the individual needs of each patient. Furthermore, the documentation of traditional plant remedies facilitates their validation and integration into modern healthcare systems, ensuring their continued preservation and utilization for future generations.

3.3.1 Importance of Pathyāpathya in tumor management

Pathyāpathya, or dietary and lifestyle guidelines, play a crucial role in Ayurveda for managing various health conditions, including tumors. These guidelines aim to balance the body's doshas (bio-energies) and promote overall well-being. For tumor patients, Ayurveda emphasizes personalized treatment approaches that consider the individual's constitution (prakriti), the nature of the tumor, and other related factors. Here are some general *Pathyāpathya* recommendations for tumor patients in Ayurveda (Agarwal & Maroko-Afek, 2018; *AYUSH*, 2019).

Balanced Diet: A balanced diet is essential for tumor patients to maintain strength and support overall health. Emphasize freshly cooked, warm, easily digestible foods. Include a variety of fruits, vegetables, whole grains, legumes, and lean proteins. Avoid processed, refined, and excessively spicy or oily foods.

Detoxification: Ayurveda emphasizes detoxification therapies (panchakarma) to remove toxins (āma) from the body, which are believed to contribute to the development and progression of diseases, including tumors. Panchakarma procedures such as *Virēcana* (therapeutic purgation) and Basti (medicated enema) may be recommended under the guidance of an experienced Ayurvedic physician.

Yoga and Meditation: Regular practice of yoga asanas, pranayama (breathing exercises), and meditation can help reduce stress, improve circulation, and enhance overall well-being in tumor patients. Yoga postures like Surya Namaskar (Sun Salutation) and *Bhujangāsana* (Cobra Pose) are beneficial. Meditation techniques such as mindfulness meditation can also be helpful.

Lifestyle Modifications: Encourage tumor patients to maintain a healthy lifestyle by getting adequate rest and sleep, staying physically active within their limits, and avoiding harmful habits like smoking and excessive alcohol consumption.

Emotional Support: Ayurveda recognizes the interconnectedness of the mind and body. Providing emotional support and counseling to tumor patients is essential for their holistic healing process. Practices like prayer, positive affirmations, and spending time in nature can also contribute to emotional well-being.

3.4 Understanding the Traditional Concepts of Tumors

In traditional medicine systems, tumors are perceived as manifestations of imbalances in the body's doshas, or vital energies (Singh, 2002). The classification of tumors into distinct types reflects the nuanced understanding of their etiology, pathogenesis, and clinical manifestations. For instance, *Ksataja visarpa*, originating from physical trauma, embodies characteristics of inflammation and stagnation, leading to the accumulation of black blood and swelling. *Agni Visarpa*, associated with fiery qualities, manifests as blistering, burning sensations, and intense thirst. *Karadama Visarpa*, with its golden hue, signifies the accumulation of toxic substances, resulting in lethargy and fever (Ambatalawa, 2005).

Ancient texts delineate the progression of tumors from benign to malignant states, underscoring the importance of early intervention and proper management. *Arbuda*, depicted as a gradually enlarging fleshy lump with root-like extensions, serves as a precursor to more serious conditions if left untreated. (Balachandran & Govindarajan, 2005; Sharma, 1981). *Upachikā*, characterized by its elevated growth resembling a *tumbasa* (ant hill), signifies a localized accumulation of morbid substances in the veins. *Vidradhi*, whether involving internal organs or external tissues, represents a form of cancer with potentially grave consequences if not addressed promptly (Kolombage, 2005). Pilika, encompassing both internal and external variants, underscores the pervasive nature of tumor growth throughout the body (Gunasena, 1961).

3.5 Significant Features of Tumor Management in Traditional Medicine

Traditional tumor management entails a multifaceted approach aimed at restoring balance to the body's doshas, eliminating morbid substances, and rejuvenating affected tissues. Herbal remedies play a central role in traditional treatment protocols, with a myriad of plant species revered for their anti-tumor properties. These botanical agents are carefully selected based on their therapeutic actions,

dosha affinities, and compatibility with the patient's constitution (Chatterjee & Pancholi, 2011).

In addition to herbal medicines traditional tumor management incorporates dietary modifications, lifestyle interventions, and therapeutic practices such as meditation and yoga (Kumarasinghe, 1997; Perera, 2019). These holistic modalities aim to address the root causes of tumor formation, including dietary imbalances, environmental toxins, and emotional stressors. By fostering a harmonious balance between mind, body, and spirit, traditional medicine seeks to not only treat tumors but also prevent their recurrence and promote overall well-being (Sastry, 2011; Prasad, 1997).

Recent scientific studies have validated the efficacy of traditional herbal remedies in inhibiting tumor growth, inducing apoptosis in cancer cells, and enhancing the body's immune response. Compounds isolated from medicinal plants such as curcumin, resveratrol, and quercetin have demonstrated potent anti-cancer effects in preclinical and clinical studies, paving the way for the development of novel therapeutic agents. However, further research is needed to elucidate the mechanisms of action of these herbal compounds and optimize their clinical utility in cancer treatment.

3.6 Identification of Common Plant Varieties Used in Tumor Management

The identification of common plant varieties used in tumor management provides valuable insights into the botanical resources harnessed by traditional healers. Local names for commonly mentioned plants used in tumor management, such as "*Heeressa, Heen thambala, Awariya, Gon kekiri, Gammiris, Nitul, Nika bark, Murngā bark, Siviya, Attana bark, Amukkarā, Ahela young leaves, Sewendarā, Iriwēriya, Iramusu, Velmī, Nelum ala, Kotadimbulā, Attikka kiri, Rukattana kiri, Dummella leaves, Kukurumān bark, Suduru, kaluduru*," among others, highlight the rich diversity of plant species utilized in traditional tumor management.

The review provides a comprehensive overview of the traditional management of tumors in Sri Lankan traditional medicine, focusing on the principles, terminology, symptomatology, and treatment modalities employed. Here, we delve deeper into various aspects highlighted in the review, discussing their significance, challenges, and potential avenues for further exploration.

3.7 Terminology and Classification:

Sri Lankan traditional medicine employs a rich terminology to describe tumors, reflecting the intricate understanding of these conditions. Terms like "*Pilikā*," "*Gadu*," "*Odu*," "*Gedi*," "*Vishādi*," and "*Vaṇa*" are used to designate tumors based on their characteristics, etiology, and morphology (Gunasena, 1961). The classification of tumors into categories such as Granthi (minor neoplasm) and *Arbuda* (major neoplasm) demonstrates a nuanced understanding of tumor pathology, resembling the classification systems found in modern oncology (Balachandran & Govindarajan, 2005; Sharma, 1981).

Symptomatology and Diagnosis:

The review outlines the diverse array of symptoms associated with different types of tumors, ranging from fever and inflammation to specific localized manifestations like red eyes or impairment of movements in limbs. This detailed symptomatology aids in the diagnosis and differentiation of various types of tumors, enabling traditional practitioners to tailor treatment approaches based on individual patient presentations (Sastry, 2011).

Treatment Modalities:

Traditional tumor management involves a holistic approach, encompassing both internal and external treatments using plant, animal, and mineral-based remedies. Various dosage forms such as ointments, juices, decoctions, and pastes are utilized based on the nature and location of the tumor (Kumarasinghe, 1997; Gunasena, 1961; Ambatalawa, 2005). The emphasis on cleansing the body internally before external treatment highlights the importance of addressing underlying imbalances in the body's humoral framework, a fundamental principle in traditional medicine systems (Prasad, 1997; Sastry, 2011).

Plant-Based Therapies:

The review identifies numerous plants with tumor control properties, highlighting their significance in traditional tumor management. Commonly used plants like *Heeressa palu*, *Gon kekiri* leaves, and *Murngā* bark have been traditionally employed for their therapeutic effects on tumors of the head and neck, upper limb, and lower limb. While these plant-based therapies have been extensively utilized in traditional practice, further research is needed to elucidate their mechanisms of action and validate their efficacy through scientific studies (Prasad, 1997).

Integrative Approach:

Sri Lankan traditional medicine adopts an integrative approach to tumor management, drawing upon insights from Ayurveda and indigenous healing practices (Prasad, 1997). The integration of herbal remedies, dietary modifications, lifestyle interventions, and spiritual practices underscores the holistic nature of traditional medicine, addressing not only the physical but also the emotional and spiritual dimensions of health (Sastry, 2011).

Challenges and Future Directions:

Despite the wealth of knowledge embedded in traditional medicine systems, several challenges hinder its integration into mainstream healthcare. Limited scientific validation, standardization of herbal formulations, and regulatory issues pose barriers to the wider acceptance and utilization of traditional tumor management approaches (Balachandran & Govindarajan, 2005).

Addressing these challenges requires collaborative efforts involving traditional healers, researchers, policymakers, and healthcare practitioners.

4. Conclusion and Recommendations

The traditional management of tumors in Sri Lankan traditional medicine represents a holistic and time-tested approach rooted in ancient wisdom and empirical observations. Through an extensive review of traditional texts, this article sheds light on the terminology, classification, symptomatology, and treatment modalities employed in traditional tumor management. The rich repertoire of plant-based remedies, coupled with an integrative approach encompassing lifestyle modifications and spiritual practices, underscores the holistic nature of traditional medicine systems.

The comprehensive understanding of tumors in traditional medicine, as evidenced by the detailed symptomatology and classification, provides valuable insights into alternative approaches to cancer care. By harnessing the therapeutic potential of plant-based remedies and indigenous healing practices, there is an opportunity to complement modern oncology with holistic and personalized interventions.

Future Recommendations:

Scientific Validation: Further research is needed to scientifically validate the efficacy and safety of traditional tumor management approaches. Clinical trials and experimental studies can elucidate the mechanisms of action of plant-based remedies and validate their therapeutic benefits.

Standardization: Standardization of herbal formulations and dosage forms is essential to ensure consistency and quality in traditional tumor management practices. Establishing standardized protocols for preparation, dosage, and administration of herbal remedies will enhance reproducibility and facilitate integration into mainstream healthcare.

Phytochemical Analysis: Phytochemical analysis of commonly used plants in traditional tumor management can provide insights into their bioactive compounds and pharmacological properties. Identifying key bioactive constituents and elucidating their mechanisms of action will facilitate the development of novel drugs and therapeutic interventions.

Collaborative Research: Collaboration between traditional healers, researchers, policymakers, and healthcare practitioners is essential to bridge the gap between traditional knowledge and modern science. Integrating traditional medicine into mainstream healthcare requires interdisciplinary collaboration, shared expertise, and mutual respect for diverse healing modalities.

Education and Awareness: Increasing awareness about the benefits of traditional tumor management among healthcare professionals and the general public is crucial. Education and training programs can enhance understanding and appreciation of traditional medicine systems, fostering greater acceptance and utilization in cancer care.

Regulatory Framework: Developing a regulatory framework for traditional tumor management practices is imperative to ensure safety, quality, and efficacy.

Regulatory guidelines and standards can provide a framework for the integration of traditional medicine into national healthcare policies and programs.

The traditional management of tumors in Sri Lankan traditional medicine offers valuable insights into alternative approaches to cancer care. By embracing the holistic principles of traditional medicine and integrating them with modern oncology, there is an opportunity to enhance cancer prevention, treatment, and survivorship. Collaborative research, scientific validation, standardization, education, and regulatory initiatives are essential steps towards realizing the full potential of traditional tumor management in promoting health and well-being for all.

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