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Unani Medicine in Palliative Oncology: Exploring Integrative Approaches for Terminally Ill Cancer Patients

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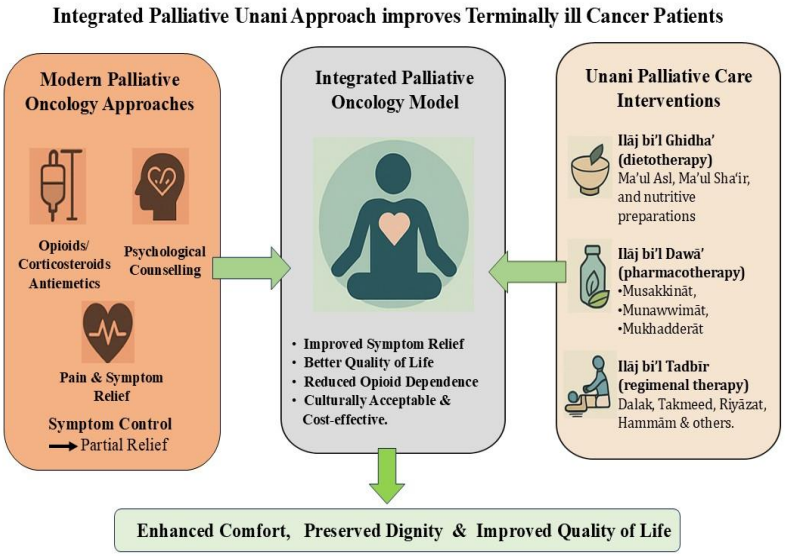
ABSTRACT

Many patients in advanced stages of Saraṭān (cancer) require palliative care to alleviate their suffering and enhance their quality of life, making it a significant global health concern. Despite the dominance of conventional medicine in palliative oncology, the importance of AYUSH systems particularly Unani medicine is becoming more widely acknowledged. This review highlights the Unani approach to palliative oncology by drawing on the classical literature, evidence-based preclinical and clinical research, and international palliative care guidelines. Individual and overall health are highly valued in Unani medicine. A comprehensive approach to reducing pain, wound healing, mobility, physical rehabilitation, nutritional decline, psychological stress, and other palliative needs related to cancer is provided by its main therapeutic modalities, Ilāj bi'l-Ghidhā (diet), Ilāj bi'l-Dawā (pharmacotherapy), and Ilāj bi'l-Tadbīr (regimenal therapy). These techniques aim to improve patient comfort and resilience by restoring the balance of Mizāj, Akhlāṭ, and Quwā. Their purpose is to complement existing cancer treatments. The incorporation of Unani traditional treatment into palliative care frameworks supports policies that incorporate the Unani medical system into mainstream healthcare. It promotes patient-centered oncology, improves symptom management, and deals with ethical concerns. The potential benefits of Unani medicine in palliative oncology are highlighted in this review, the first comprehensive analysis of its kind. improving patients' comfort and holistic well-being.

KEYWORDS: Palliative care; Cancer; Unani medicine; Ilāj bi'l-Dawā; Ilāj bi'l-Ghidhā; Ilāj bi'l-Tadbīr; Saraṭān.

Graphical Abstract:



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INTRODUCTION

Saraṭān (Cancer) is the second leading cause of illness and death globally, accounting for approximately 19.3 million new cases and nearly 10 million deaths in 2020, with constant projections indicating an increase in incidence [1,2]. Low- and middle-income countries (LMICs) account for 70% of the burden due to late diagnosis, deficient treatment facilities, and inaccessible supportive care. Tobacco and alcohol use, poor diet, low physical activity, and environmental carcinogens are modifiable risk factors that will further enhance the risk of cancer [3–5].

Despite advancements in oncology, cancer management is still difficult, which emphasizes the value of palliative care in improving quality of life. Palliative care, according to the World Health Organization (WHO), is a strategy that alleviates suffering and attends to patients' physical and emotional needs to enhance the quality of life for patients and their families [6,7]. Access to palliative care services is still restricted, especially in LMICs, even though palliative cancer care initiatives are acknowledged globally. The excess use of opioids, antiemetics, corticosteroids, and sedatives in conventional treatment is fraught with problems, including side effects, expensive, cultural differences, and a shortage of skilled personnel [8–12].

The National Program for Palliative Care (2012) and the National Health Policy (2017), which also promotes the integration of AYUSH systems, have recognized palliative care as a crucial aspect of healthcare in India [13–15]. Opportunities to create objective, economical, comprehensive care support and treatment are presented by this integration. Based on the concepts of Mizaj (temperament) and Akhlat (humoral balance), Unani medicine provides a comprehensive approach to patient care that aligns with palliative care goals [16,17]. Its therapeutic modalities, Ilāj bi'l Ghidha' (diet), Ilāj bi'l Dawā' (pharmacotherapy), and Ilāj bi'l Tadbīr (regimenal therapy), are known to have analgesic, anti-inflammatory, antioxidant, and immunomodulatory qualities that could improve the quality of contemporary oncology care [18–21].

This review explores the role of Unani medicine in palliative oncology by analyzing classical texts, recent scientific studies, and global health policies. It highlights Unani's contributions to symptom management, nutritional and psychosocial support, spiritual well-being, and ethical caregiving, highlighting the potential integration of Unani medicine into national and international palliative care frameworks.

METHODOLOGY:

This review integrates classical Unani medical concepts with current scientific evidence about palliative cancer care. Research was collected from classical Unani texts, and databases like ScienceDirect, Scopus, PubMed, Web of Science, Google Scholar, ResearchGate, AYUSH Research Portal, and CCRUM publications (January 2000–September 2025) using keywords suh as *Unani medicine, palliative care, integrative oncology, cancer symptom management*. In addition to the above Classical Unani texts, including *Al-Qanun fi al-Tibb, Zakhira Khwarazm Shahi*, and *Kitab al-Tasrif*, and others, were also reviewed.

The inclusion criteria were Review and Research articles, reports, and policy documents related to unani interventions, integrative or palliative oncology, or symptom relief. Exclusion criteria were non-relevant articles. Extracted data were synthesized descriptively into themes related to pain management, wound healing, nutrition, and psychosocial and spiritual support in Unani-based palliative care.

Unani Perspective on the Etiology and Pathogenesis of Saraṭān

Prominent Unani scholars, such as Jālīnūs (Galen, 129–199 AD), Rāzī (Rhazes, 854–925 AD), Al-Zahrāwī (Abul Qasim, 936–1013 AD), and Ibn Sīnā (Avicenna, 980–1037 AD), disclosed a comprehensive detail of Saraṭān and its clinical manifestations. Both Ibn Sīnā and Rāzī describe various types of Saraṭān and provide diverse therapeutic interventions aligned with the Mizāj and Akhlat.

According to Unani medicine, cancer develops when Mādda Sawdāwiyya builds up excessively in the affected areas. Al-Zahrāwī is credited as being the first surgeon to perform the traditional excision of breast cancer, emphasizing that excision is only successful when the disease is still in its early stages and full resection is possible [22]. Saraṭān is categorized as Waram Ṣulb (hard swelling) in Unani terminology, which is defined by hardened lesions that contain Mādda Sawdāwiyya [23]. It primarily affects people who lead unhealthy or sedentary lifestyles, and it is more common in women than in men. It is especially common in organs with cavities, like the breast, lungs, uterus, cervix, and oral cavity, where morbid material can build up [23–25]. Sawdā's overproduction and pathological transformation are the main causes of Saraṭān's complicated etiology and progression.

Five different types of these changes have been described by classical Unani scholars: (a) excessive production of normal Sawdā'; (b) burning of normal Sawdā' into an abnormal form; (c) production of Sawdā' from burning Dam (blood); (d) formation of Sawdā' from burning Balgham (phlegm); and (e) formation of Sawdā' from burning Safrā (yellow bile) [26]. The resultant morbid Sawdā', being excessively hot and Akkāl, causing Iḥtirāq in the organs, which changes the quality and balance of the Arkān and Mizāj and eventually disturbs the Akhlat. This disruption causes structural and functional changes in the affected tissues (Ṣūrat Naw'iyya), leading to malignancy known as Saraṭān [24,25,27-29].

4. Need for Palliative Care in Terminally Ill Cancer Patients:

Palliative care is fundamental to the management of advanced and terminal stages of cancer, where the primary goal shifts from cure to giving comfort, dignity, and grace, and improving the quality of life. It focuses on the multifaceted physical, psychological, and spiritual challenges faced by patients and their caregivers when the curative options are exhausted. The following spheres highlight the essential needs of palliative oncology care.

4.1 Pain Management:
Pain is the most disturbing and prevalent symptom in terminal cancer, often resulting from tumor invasion, treatment complications, or inflammation [30]. Although opioids and nonsteroidal anti-inflammatory drugs (NSAIDs) remain essential to pain management, their use is limited due to adverse effects and lower accessibility to supply [31,32]. Effective pain control augments mobility, sleep, and emotional well-being, and is a key element in improving patients' quality of life.

4.2 Skin and Wound Care
Patients who are bedridden or have advanced cancer experience severe discomfort, infection, and social distress due to pressure ulcers and malignant wounds. Reducing pain, avoiding septicemia, and preserving hygiene all depend on comprehensive wound care, which includes pressure reduction, wound debridement, wound odor control, and infection prevention.

4.3 Nutritional and Hydration Support:
Malnutrition and dehydration are common in advanced cancer due to anorexia, mucositis, dysphagia, and metabolic alterations linked to cancer cachexia [33]. Artificial nutrition, instead of a regular diet (oral or parenteral) and hydration, helps achieve physiological equilibrium, prevent electrolyte imbalances, and improve tolerance to cancer therapies. Personalized Dietary counselling and nutritional support are important for maintaining energy and strength.

4.4 Physical Rehabilitation and Mobility
Maintaining mobility helps prevent complications. Assisted movement, massage, mild exercises, and shifting position not only improve circulation but also promote physical well-being and a sense of independence.

4.5 Oral and Mucosal Care
Oral complications such as mucositis, xerostomia, and oral candidiasis frequently result from chemotherapy and radiotherapy [34]. These conditions disrupt regular intake of food, nutrition, and speech. Regular oral assessment, hygiene maintenance, and topical management can improve patient comfort and nutritional intake.

4.6 Gastrointestinal and urinary tract care
Gastrointestinal and urinary dysfunctions, including constipation, fecal impaction, urinary retention, and incontinence, are frequent owing to medication side effects, radiation, or tumor invasion [35]. Proactive management through bowel care regimens, hydration, and symptom monitoring prevents discomfort and further complications.

4.7 Neurological and Psychosocial Support
Neurological complications, such as neuropathic pain, cognitive impairment, delirium, and depression, are increasingly being recognized with newer cancer therapies [36,37]. Psychological counselling and support enhance coping with end-of-life challenges.

5. Unani Palliative Care Monitoring and Support in Saraṭān:
The core Unani therapies, *'Ilāj bi'l Dawā* and *'Ilāj bi'l Tadbīr,* are employed either singly or in a combined therapeutic approach, depending upon the severity and chronicity of the cancer. '*Ilāj bi'l Dawā'* encompasses single or compound formulations, such as *Munḍij-o-Mushil therapy*, whereas '*Ilāj bi'l Tadbīr* includes therapies like Qay' (emesis), Riyāḍat (exercise), Ḥijāma (cupping), Faṣd (venesection), Ḥammām (bath), and Tadhīn (oiling). These therapies are essential in reducing symptoms and restoring physiological equilibrium. The fundamental principles of Unani treatment are maintaining Mizāj, Akhlāt, and Quwā. Unani palliative oncology care prioritizes not only effective symptom management but also the preservation of patient dignity and the promotion of holistic well-being in advanced and terminal cancer. The following section outlines the key Unani approaches applied in the palliative care of cancer and terminally ill cancer patients.

5.1 Management of Pain in Saraṭān (Cancer):
Cancer pain is recognized as one of the most alarming symptoms managed through a personalized approach that aligns with the severity of the pain for the patient suffering from Saraṭān. The Unani management of cancer pain is managed by the *Moaddelāt, Musakkināt, Mohallilāt, Munawwimāt,* and *Mukhadderāt*, emphasizing personalized and ethical care. Single drugs such as *Sūranjān*, *Asgand*, *Zanjabīl*, and *Kalonjī* show analgesic and anti-inflammatory activity. *Asgand* inhibits COX-2 and NF-κB, reducing inflammatory pain [39]. *Kalonjī*, thymoquinone suppresses IL-6, TNF-α, and prostaglandin E2[40]. *Sūranjān* colchicine modulates microtubule-mediated nociceptive signaling [41]. Topical agents such as *Roghan-e-Zaytūn* and *Roghan-e-Sūranjān* relieve musculoskeletal pain through antioxidant and COX-2 inhibitory activity [41,42]. This multifaceted unani approach modulates the inflammatory and nociceptive pathways, reduces opioid dependence, and enhances comfort.

Unani Advia Mufrada (single drugs) are frequently used in pain management such as *Sūranjān*, *Tukhm-i-Khaṭmī*, *Būzīdān*, *Asgand*, *Sanā*, *Chobchīnī*, *Zard Chob*, *Kalonjī*, *Zanjabīl*, *Ushaq*, *Khūlanjān*, and *Qusṭ* [38, 43]. *Advia Murakkabah (*Compound formulations) for oral administration include *Ḥabb-e-Ghule Aakh*, *Ḥabb-i-Muqil*, *Awjā'iyya*, *Ma'jūn Jograj Gūgal*, *Ma'jūn-i-Ghīkvār*, *Sufūf-i-Sūranjān*, *Kushta-i-Ga'odantī*, *Ḥalwa-i-Ghīkvār*, *Ḥabb-i-Sūranjān*, *Ma'jūn-i-Chob Chīnī*, *Ma'jūn-i-Sūranjān*, *Ḥabb-i-Asgand*, *Majoon Azaraqui*, *Khamira Khashkhash*, *Ma'joon Khadar*, *Habb-e-Mubarak*, and *Habb-e-Karanjwa*. Local applications frequently utilize *Roghan-i-Zaytūn, Roghan Surkh, Roghan-i-Bābūna Sāda, Roghan-i-Dārchīnī, Roghan-i-Shibit, Roghan-i-Mālkanganī, Roghan-i-Ḥinnā, Roghan-i-Maṣṭagī, Ḍimād Muḥallil, Roghan-i-Sūranjān, Roghan-i-Akseer, Qairooti, Roghan-i-Kahu,* and *Roghan-i-Khashkhash*. These are often accompanied by regimenal therapies such as Ḥammām (therapeutic bath), Takmīd (fomentation), and Dalak (massage) [44].

5.2 Wound Care: Bedsores and ulcerative cancers

Classical Unani texts such as *Al-Qanun fi'l-Tibb* by Ibn Sina, *Zakhira Khwarazm Shahi* by Jurjani, and *Kitab al-Tasrif* by Zahrawi describe in detail various types of wound and their treatments. *Sibr Zard* (*Aloe vera* (L.) Burm.f.), *Amba Haldi* (*Curcuma aromatica* Salisb.), *Mur Makkī* (*Commiphora myrrha*), and *Gulnar* (*Punica granatum* L.) exhibit *Mujaffif* (desiccant), *Daaf-e-Taʿaffun* (antiseptic), *Khatim* (cicatrizant), and *Mundammil-e-Qurooh* (healing) actions. *Sibr Zard* accelerates epithelialization and angiogenesis by upregulating TGF-β/VEGF [45]. *Commiphora aromatica* extracted essential oil induces apoptosis through JNK/p38 MAPK activation [46]**.** *C. myrrha* reduces COX-2 expression and oxidative stress [47]. *Punica granatum* extract promotes wound contraction and fibroblast proliferation [48].

Clinical evidence supports Unani wound management; *Zaidi et al.* (2016) achieved limb salvage in diabetic ulcers with Unani and leech therapy [49]. Ahmad et al. (2019) reported complete healing of chronic ulcers using *Marham* formulations [50]. *Rizwanullah et al.* (2020) showed the efficacy of the Unani formulation *Zaroor-e-Qawi* in treating pressure ulcers by enhancing debridement, promoting healthy granulation and epithelialization, and exhibiting analgesic and hemostatic effects [51]. Thus, Unani wound care, validated by modern research, offers a safer, cost-effective, and individualized approach for managing bedsores and ulcerative cancer.

5.3 Artificial Nutrition and Hydration

Life support and physiological stability depend on proper nutrition and hydration. Ghiza-e-Dawāʾīya and Huqna al-Maghziya are the Unani method. Ghiza-e-Dawāʾīya that improve hydration and digestive strength include Maʾul Asl (honey water), and Māʾul Shaʿīr (barley water), and different Sharbat [52]. By preventing NF-κB activation and lowering oxidative stress, honey has anti-inflammatory and antioxidant properties [53], and polysaccharides from medicinal plants alter gut microbiota and promote metabolic resilience [54]. These preparations are being assessed for their potential use in managing cachexia and providing nutritional support to patients with advanced cancer as part of ongoing CCRUM–AIIMS integrative oncology studies (2023–2025) [55].

5.4 Ambulation and Physical Rehabilitation

In Unani medicine, *"Ilāj bi'l Tadbīr"* refers to the regular treatments like Dalak, Takmīd, and Riyāzat that improve mobility and lessen fatigue and stiffness. Serotonin and endorphins are released when massage activates the mechanoreceptors in the affected area [56]. Both Roghan-e-Malkangni (*Celastrus paniculatus* Willd. oil) and Roghan-e-Kunjad (*Sesamum indicum* L. oil) have antioxidant and neuroprotective properties [57,58].

For musculoskeletal pain, Hakeem Mohammad Azam Khan in Akseer-e-Azam suggests hot medicated fomentation. Riyāzat, which is intended for Tanqiya-e-Mawād, needs to be according to the patient's age, disposition, and level of illness. Depending on personal capacity, it can range from Riyāzat Qaleela (light exercise), Riyāzat Moʻatadila (moderate exercise), and Riyāzat Qawiya (vigorous exercise) [59,60,61]. These unani treatments enhance psychological health, muscle tone, and circulation, all of which are in line with WHO guidelines for non-pharmacological palliative cancer treatments.

5.5 Oral Hygiene and Mucositis

Oral mucositis (OM) is a common and painful side-effect of chemotherapy and radiotherapy, severely affecting the patient's quality of life. Unani oral health management incorporates single drugs such as Miswak (*Salvadora persica* L.), Neem (*Azadirachta indica* A.Juss.), Mulethi (*Glycyrrhiza glabra* L.), and Sibr (*Aloe vera* (L.) Burm.f.). Glycyrrhizin from *G. glabra* improves mucosal repair through COX-2 and prostaglandin modulation [63], while the extract from *S. persica* suppresses IL-1β and TNF-α to produce antimicrobial and anti-inflammatory effects [62]. Herbal gargles containing Seer/Lahsun (*Allium sativum* L.) and Arjun Chaal (Bark of *Terminalia arjuna* (Roxb. ex DC.) Wight & Arnot) offer antimicrobial and antioxidant protection [64], and a systematic review verified the effectiveness of herbal mouthwash in treating chemotherapy-induced mucositis [65].

While Mazmaza (mouthwash) made with Arq Mako, Arq Kaddu, Arq Khayar, and Roghan Gul relieves ulcers, gingivitis, and mucositis, traditional Gargarah (gargling) made with Arjun Chaal, Seer/Lahsun, and Aqarqarha decoctions strengthens gums and reduces inflammation [66,67]. Oral hygiene and gum strength are maintained by Sunoon (herbal tooth powders), such as Sunoon-i-Zard, Sunoon-i-Mulook, Sunoon-i-Mujalli, and Sunoon-i-Balchhar, or formulations containing Abhal, Post Beekh Kibr, Tootiya, and Namak Indarni. Mouth refreshment and mucosal healing are two benefits of Mazoog (chewing therapy) with Darchini, Qaranfal, Sumbul Teeb, and Ood [68,69]. Collectively, these unani interventions reduce inflammation, prevent oral infections, and enhance oral comfort in patients with cancer, complementing holistic unani palliative care for cancer patients.

5.6 Gastrointestinal and Urinary Care in Palliative Management

The unani approach utilizes Mullayyin, Murattib, and Mudirrāt to manage bowel and urinary dysfunction in cancer palliative care. While the polyphenols in *Ficus carica* L. modulate gut microbiota and have mild laxative effects, *Plantago ovata* Forssk. improves intestinal motility and hydration through mucilage action [70,71]. Dietary antioxidants from *Vitis vinifera* L. lessen oxidative intestinal stress, while *Coriandrum sativum* L. and *Foeniculum vulgare* Mill. have diuretic and spasmolytic properties [72,73].

Pharmacopoeial formulations such as *Jawarish Zarooni*, *Majoon Kundur*, *Majoon Masil-ul-Baul*, and *Arq-e-Badiyān* support urinary functions [74]. For constipation and bowel irregularities, *Roghan-e-Badam*, *Ma'ul Jubān*, and *Aspaghol* are used as lubricants and mild laxatives. Unani medicines like *Kuchla* are administered cautiously to enhance peristalsis, whereas compound preparations such as *Itrifal Mullayyin*, *Majoon Anjeer*, *Hab-e-Qabz kusha*, and *Sharbat Deenar* restores bowel function [74,75].

Ilāj bi'l Ghidha' includes light, non-irritating foods such as pomegranate, grapes, spinach, soft *khichdi* and yogurt, while avoiding spicy, oily, or acidic food items. *Ilāj bi'l Tadbīr* incorporates gentle exercises and massages to enhance motility [27,76,77]. Drug therapy (*Ilāj bi'l Dawā'*) with *Jawarish Anarain*, *Jawarish Mastagi*, *Sharbat-e-Anar*, and *Habb-e-Pappita* facilitating digestion and balances gastrointestinal function. Altogether, these interventions safely relieve urinary discomfort, diarrhea, constipation, fecal impaction, and improve the comfort and quality of life of terminally ill cancer patients.

5.7 Neurological and Psychosocial Support

The treatment protocols include Istifrāgh (biopurification), Taskhīn (producing warmth), Tajfiīf (desiccation), Tafrīḥ-i Taba' (exhilaration) [81]. Unani palliative care uses therapies, such as *Naṭūl*, *Tila*, *Hammām*, and *Lakhlakha*, to promote relaxation, improve sleep, and enhance neurological function. Neuroprotective formulations *Khamira Abresham* and *Mufarreh Shaikhur-Raees*, resolve neurological problems and cognitive function **[**26]. *Withania somnifera* (L.) Dunal exhibits anxiolytic and neuroprotective effects via GABAergic and BDNF (Brain-derived neurotrophic factor) pathways, *Glycyrrhiza glabra* L. reduces corticosterone levels and mitigates stress-induced oxidative damage, while *Bacopa monnieri* (L.) Wettst. improves cognitive function through cholinergic and antioxidant mechanisms [78-80]. Collectively, these unani therapeutic methods alleviate fatigue, anxiety, and insomnia, while promoting psychological well-being.

Under *'Ilāj bi'l Tadbīr*, relaxation and mental repose are encouraged through *Tadheen* using *Roghan-e-Kaddu*, *Roghan-e-Khashkhash*, or *Roghan-e-Kahu* applied on the scalp. *Hammām* treatments help with fatigue and insomnia. *Naṭūl* involves decoctions of *Banafsha*, *Neelofer*, *Gul-e-Surkh*, or *Kishneez Sabz* over the head for stress relief. Aromatic oils prepared by *Roghan Gul*, *Roghan Kaddu*, and *Roghan Badam shireen* are used in *Su'oot* and *Tila* to soothe the brain and promote sleep, while *Zimad*, *Dalk*, *Lakhlakha*, and *Qutoor* use *Roghan-e-Neelofer* or *Roghan Khashkhash*, which offer deep relaxation [81].

Under *'Ilāj bi'l Dawā'* (pharmacotherapy), neurotonic and cognitive-enhancing herbs such as *Ustukhudoos*, *Brahmi*, *Waj Turki*, *Chilghoza*, and *Asgand* are used alongside Muqawwi-e-Asaab wo Dimagh unani formulations like *Khamira Abresham*, *Majoon Baladar*, *Majoon Khadar*, *Majoon Najah*, *Mufarreh Shaikhur-Raees*, *Mufarreh Azam*, *Hareera Maghz Badam Wala*, and *Dawa-ul-Misk Sada* with *Arq-e-Gawzaban* to strengthen the nervous system and revive emotional balance [82].

Unani interventions Ilāj bi'l-Dawā (pharmacotherapy), Ilāj bi'l-Ghidhā (dietotherapy), and Ilāj bi'l-Tadbīr (regimenal therapy) act through COX-2, NF-κB, cytokine, and neuroendocrine modulation, providing molecular explanations for their roles in pain relief, wound healing, immune regulation, and psychosocial comfort. Integrating these evidence-based Unani interventions with modern oncology aligns well with Unani holistic palliative oncology.

6. Results and Review findings:

The review finds a strong conceptual and therapeutic alignment between Unani medicine and the goals of modern palliative care. The key findings are summarized in Table 1:

- **Pain Management**: Unani formulations, such as *Habb-e-Suranjan, Majoon Jograj Gūgal*, and *Roghan-e-Zaytūn*, show analgesic and anti-inflammatory activities, reporting unani pharmacological pain control.
- **Wound Care:** traditional unani preparations (*Marham Momiyā'ī, Sibr Zard, Gulnar*) demonstrate antiseptic, cicatrizant, and anti-inflammatory properties beneficial for pressure ulcers and ulcerative lesions.
- **Nutritional Support**: *Ghiza-e-Dawā'īya* and Huqna al-Maghziya (nutritive enemas) promote hydration and strength maintenance in cancer cachexia.
- **Physical Rehabilitation:** Regimenal therapies such as Dalak, Takmīd, Riyāzat improve circulation, mobility, physical and psychological comfort.
- **Oral and Gastrointestinal Care**: Miswak, *Arq-e-Badiyān, Itrifal Mullayyin*, and similar formulations prevented mucositis, constipation, and urinary discomfort.
- **Neurological & Psychosocial Support**: Khamira Abresham, Mufarreh Shaikhur-Raees, and oil-based therapies (*Roghan Khashkhash, Roghan Kahu*) provide anxiolytic, neurotonic, and improve emotional resilience.

Overall, Unani palliative strategies reflect a comprehensive, ethical, and patient-centered framework that parallels the WHO palliative care principles.

Table 1. Unani interventions and their application in palliative oncology: The table summarizes the Unani interventions and their applications in Palliative oncology.

Unani Intervention	Line of Treatment	Unani Single Drugs and Formulations	Applications in Palliative Oncology
Management of Pain in Cancer	Ilāj bi'l Dawā' (pharmacotherapy) using Moaddelāt, Mohalillāt, Musakkināt, Munawwimāt, Mukhadderāt. and Ilāj bi'l Tadbīr (regimenal therapy)	**Advia Mufrada (single drugs) -** Sūranjān, Tukhm-i-Khaṭmī, Būzīdān, Asgand, Sanā, Chobchīnī, Zard Chob, Kalonjī, Zanjabīl, Ushaq, Khūlanjān, and Qusṭ [38]. **Advia Murakkabah** (Compound formulations)- *Ḥabb-e-Ghule Aakh, Ḥabb-i-Muqil, Awjā'iyya, Ma'jūn Jograj Gūgal, Ma'jūn-i-Ghīkvār, Sufūf-i-Sūranjān,*	It reduces nociceptive sensitivity, lowers opioid dependence, comforts distress, and enhances sleep quality.

		Kushta-i-Ga'odantī, Ḥalwa-i-Ghīkvār, Ḥabb-i-Sūranjān, Ma'jūn-i-Chob Chīnī, Ma'jūn-i-Sūranjān, Ḥabb-i-Asgand, Majoon Azaraqui, Khamira Khashkhash, Ma'joon Khadar, Habb-e-Mubarak, and Habb-e-Karanjwa Ilāj bi'l Tadbīr like Ḥammām, Takmīd, and Dalak.[75].	
Wound Care: (Bedsores and Ulcerative Cancers)	Ilāj bi'l Dawā' utilizing Mujaffif, Khatim, Daaf-e-Ta'affun, and Mundammil-e-Qurooh actions.along with Ilāj bi'l Tadbīr	Marhamāt, Roghanāt, and Araqāt for cleansing and healing, such as *Sibr Zard, Amba Haldi, Gulnar, Mur Makkī , and Mazoo*	It promotes granulation, reduces infection, odor, and pain, and enhances the healing of ulcers and cancer wounds.
Artificial Nutrition and Hydration	Ilāj bi'l Ghidha' and Huqna al-Maghziya (nutritive enemas) under Ilāj bi'l Tadbīr.	Ghiza-e-Dawā'īya such as Sharbat, Ma'ul Asl, Ma'ul Sha'ir, Joshanda of various nutritive preparations	Maintains hydration, strength, and vitality; supports nutrition in cachexia.
Ambulation and Physical Rehabilitation	Ilāj bi'l Tadbīr using Dalak, Takmīd, Riyāzat, and Hammām.	Roghan (medicated oils) such as Roghan-e-Kunjad, Roghan-e-Malkangni, and unani fomentation agents for Takmīd.	Enhances circulation, relieves stiffness, prevents contractures, reduces fatigue, and promotes physical well-being
Oral Hygiene and Mucositis Management	Ilāj bi'l Dawā' and Ilāj bi'l Tadbīr through Miswak, Gargarah, Mazmaza, Sunoon, and Mazoog	Mufradāt like Miswak, Sibr, Neem, Mulethi; Roghan Gul, Arq Mako, and mild herbal rinses for local application.	Prevents oral mucositis, ulceration, halitosis, and infections; maintains oral hygiene and comfort during therapy.
Gastrointestinal and Urinary Care	Ilāj bi'l Dawā'using Mullayyin, Murattib, and Mudirrāt, Ilāj bi'l Ghidha', and Ilāj bi'l Tadbīr	Advia Mufrada like Aspaghol, Anjeer, Banafsha; Advia Murakkabah like Itrifal Mullayyin, Itrifal Zamani, Majoon Anjeer, Hab-e-Muqil, Hab-e-Qabzkusha, Hab-e-Ghariqoon, Hab-e-Mubarak, Sharbat Deenar, and Gul-e-Kand	Promotes digestion. Relieves constipation, supports urinary health, and enhances gastrointestinal comfort in terminal cancer patients.
Neurological and Psychosocial Support	Ilāj bi'l Dawā' and Ilāj bi'l Tadbīr using Naṭūl, Tila, Su'oot, Hammām, Zimad, and Lakhlakha	Mufarrihāt, Musakkināt, and Muqawwi-e-Asaab wo Dimagh like Khamira, Majoon, and Mufarreh preparations	Reduces anxiety, depression, and insomnia; strengthens the nervous system; enhances mental health and cognitive function.

DISCUSSION:

This review highlights the significant potential of Unani medicine in enhancing palliative care for patients with advanced cancer. In order to address the physical, emotional, and spiritual aspects of suffering while maintaining dignity and enhancing quality of life, Unani medicine's patient-centered, holistic philosophy closely resembles the global goals of contemporary cancer palliative care.

Modern oncology can benefit from Unani approaches like "Ilāj bi'l Tadbīr" (regimenal therapy), "Ilāj bi'l Ghidha" (dietotherapy), and "Ilāj bi'l Dawā" (pharmacotherapy). Moaddelāt, Mohalillāt, Musakkināt, Munawwimāt, and Mukhadderāt formulations are used in pain management to balance humor, lower inflammation, and lessen opioid dependency.

Wound care through *Mujaffif* (desiccant), *Daaf-e-Ta'affun* (antiseptic), and *Mundammil-e-Qurooh* (healing) actions aids ulcer management and restores tissue integrity. Nutritional support using *Ghiza-e-Dawā'īya* and *Huqna al-Maghziya* maintains hydration and strength, while regimenal therapies such as *Dalak* (massage), *Takmīd* (fomentation), and *Riyāzat* (exercise) improve circulation, mobility, and psychological relaxation. Similarly, oral hygiene by *Miswak, Mazmaza, Gargarah*, digestive care using *Mullayyin, Murattib*, and *Mudirrāt* agents, and neuropsychological support by *Naṭūl, Tila, Hammām, Zimad, Lakhlakha,* and *Mufarrihāt* preparations collectively strengthen the Unani system of medicine of comprehensive palliation in cancer patients.
These unani therapeutic approaches are in line with international principles of palliative care. The National Comprehensive Cancer Network (NCCN) stresses early, holistic, and symptom-focused care. The American Society of Clinical Oncology (ASCO) and the European Society for Medical Oncology (ESMO) recommend incorporating psychosocial and cultural factors. The WHO Traditional Medicine Strategy 2023–2032 advocates the safe integration of evidence-based traditional practices into national health systems. The Unani therapeutic approach follows these standards by focusing it on holistic care, respecting their dignity, using ethical methods, and making sure that treatments are appropriate for the culture.

Table 2. Alignment of Unani palliative care with global integrative Oncology Guidelines: The table highlights common objectives and how Unani palliative care principles correspond with international integrative oncology guidelines.

Domain	Global Guideline Framework	Corresponding Unani Approach in Palliative Oncology	Alignment
Holistic Patient Care	NCCN (2024): Multidisciplinary management addressing physical, psychosocial, and spiritual needs.	Harmonizing Mizāj, Akhlāṭ, and Quwā balance through a holistic approach	High
Early Integration of Palliative Care	ASCO/ESMO: Palliative care is initiated alongside active cancer therapy.	Unani therapies complement conventional oncology in the early stages for symptom relief.	Moderate–High
Cultural & Ethical Sensitivity	WHO (2023–2032). Integration of traditional medicine into culturally rooted health systems.	Ethical, culturally consonant, and patient-centered care approach.	High
Non-Pharmacologic Support	NCCN/WHO: Exercise, diet, and counselling as adjuncts to therapy.	Ilāj bi'l Ghidha' and Ilāj bi'l Tadbīr - Dalak, Riyazat, and counselling-based interventions.	High
Evidence & Safety	ESMO/ASCO: Validation, pharmacovigilance, and standardization	Need for further RCTs for unani formulations in cancer palliative care.	Moderate
Policy Integration	WHO Strategy and India's NHP 2017: Mainstreaming traditional medicine in public health.	Integrated under AYUSH and the National Programme for Palliative Care (2012).	High

LIMITATIONS AND FUTURE DIRECTIONS

Despite Unani medicine's promising potential in palliative oncology, several issues must be addressed to establish its scientific validation. Currently, there is a limited randomized or mechanistic research supporting its efficacy and safety, and most of the evidence comes from case studies and small-scale trials. The pharmacokinetics, pharmacodynamics, and mechanisms of action of many unani formulations are poorly understood. Toxicological and pharmacovigilance studies are needed as because possible herb–drug interactions with opioids and chemotherapeutics could alter metabolism or therapeutic outcomes. Additionally, there is less research on the cultural acceptance of Unani palliative care for patients in various palliative settings.

Controlled clinical trials and the creation of evidence-based integration protocols for safe co-administration with traditional therapy should be the top priorities of future research. Culturally sensitive and ethical implementation can be further guided by qualitative research that examines the experiences of patients and unani health professionals. In order to enable its evidence-based integration into comprehensive palliative oncology models, there is a recognized need and ongoing research to strengthen the scientific validation of Unani medicine. As an adjuvant therapy to manage the side effects of traditional cancer treatments and improve overall well-being, this integration is viewed as a means of improving the comfort, dignity, and quality of life for patients with terminal cancer.

CONCLUSION:

According to this review, Unani medicine has a great deal of potential to improve palliative care for patients with advanced cancer because of its holistic and patient-centered approach. This all-encompassing strategy, which addresses pain, wound healing, nutrition, mobility, and psychosocial well-being, is highly compatible with the objectives of palliative care. Further evidence-based research, evaluation of safety and efficacy, and integration with modern palliative care frameworks are essential to fully realize this potential. Unani medicine can aid in the creation of culturally aware, reasonably priced, and successful palliative oncology models with the right clinical validation and expert training.

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