

INTEGRATION OF UNANI MEDICINE IN CANCER MANAGEMENT**¹Farah Naaz* and ²Saad Ahmed**

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ABSTRACT

Unani medicine is the traditional art of healing recognized worldwide. Unani medicine has got answers to every disease and ailment which makes it parallel to modern medicine in providing healthcare services to mankind. Cancer is one of the fastest growing diseases, with an estimated worldwide incidence of 10 million new cases per year. The goal of cancer treatment is first to eradicate the cancer. If this primary goal cannot be accomplished, the therapeutic goal shifts to palliation, the amelioration of symptoms, and preservation of the patient's quality of life (QOL). Current conventional anticancer therapies are associated with adverse effects, drug resistance, and cancer recurrence. Therefore, there is still an urgent need for new therapeutic options for cancer.

Current evidence, based on modern studies suggests that Unani system of medicine may provide alternative means to cancer treatment. This review offers an evidence-based perspective of integration of Unani medicine in cancer management. An effort has been made to understand the role Unani medicine can play in cancer management as adjuvant therapy as well as a substitute to conventional chemotherapeutic agents.

KEYWORDS: Unani medicine, cancer, adjuvant therapy, substitute.

INTRODUCTION

Cancer is the second important cause of morbidity worldwide accounting for 8.8 million deaths in 2015. Globally, nearly 1 in 6 deaths is due to cancer. Approximately 70% of deaths from cancer occur in low- and middle-income countries.^[1] Cancer is a group of diseases characterized by uncontrolled cell growth and ability to invade other tissues through direct cell migration or through the blood and lymph systems. More than 100 different types of

cancer are known. A tumor is an extra mass of cells with abnormalities in their DNA. Tumors may be benign (not cancer), or malignant (cancer).^[2] Among many others, the etiology of cancer is largely influenced by tobacco smoke, infection, chemicals, radiation, environmental factors, and unhealthy diet.^[3] Cancer cells are able to grow, invade neighboring tissues and may also affect other organs. Therefore, tumors arise when cells lose their ability to undergo regulated cell growth. If the diagnosis is made at an early stage, cancer can be successfully treated by surgery and radiation. Whereas, advanced tumors require chemotherapy and although these drugs are successful, they are linked with severe adverse events and drug resistance.^[4]

The term ‘cancer’ is derived from the Greek and Latin words for a crab, because a cancer "adheres to any part that it seizes on in an obstinate manner, similar to a crab".^[5] The Unani System of Medicine is a complete medical system, which specifically deals with the various states of health and disease. It provides promotive, preventive, curative and rehabilitative healthcare. Unani medicine is a holistic approach to cancer care.

This paper presents a review of cancer in Unani medicine and focuses on the integration of Unani medicine in cancer management. An approach has been made through this paper in understanding the role Unani medicine can play in cancer management and an attempt has been made with available evidences from modern as well as Unani texts that if employed for cancer management either as adjuvant or as a replacement to conventional chemotherapeutic agents, it would be proved highly fruitful.

Cancer

Concept and Management in Unani Medicine

Malignant tumors are collectively referred to as cancers. Its literal meaning is “crab” as it sticks to its prey like a crab. The Unani terminology for cancer is Sartān. Sartān is an Arabic word which means crab as it sticks to its prey like a crab. Sartan has been defined as a type of malignant, melanotic swelling which can occur anywhere in the body. It starts with a small swelling which gradually increases with time. It spreads very rapidly and the roots of this swelling are deep with prominent vessels.^[6-7] The eminent Unani physicians notably, Galen (129-199AD), Rhazes (854-925), Abulcasis (936-1013), and Avicenna (980-1037) were acquainted with cancer. In records, Galen (Jālīnūs) was the first to describe tumors, including cancer, in a systematic way. He approved Hippocrates’ basic theory of cancer, which mentioned cause of cancer as an excess of black bile. Galen assumed cancer as a disease

associated with black bile humor which is very hard to be diagnosed at early stages. Administration of an appropriate purgative has been suggested to remove excess black bile from body and thereby adopting ways which prevent the generation and accumulation of black bile in blood vessels as far as possible.^[8] Galen has also emphasized that that newly formed cancers can be treated through removal of harmful humor from the body and by use of some topical anti-cancer drugs. But, in the case of advanced cancer, harmful humors must firstly be removed from the body by means of purgatives and afterwards, eradication of cancerous tumor should be done in a way that all tumor roots are removed. Then, adjacent vessel should be pressed in order to remove their thick blood. Rhazes' briefly classified benign and malignant tumors; he mentioned in his treatises that some hard swellings found in body are similar to cancer. He categorized such swellings into those with and without pain. The basis of this differentiation is based on the fact that hard swellings usually develops secondary to warm swellings (such as phlegmatic or similar swellings), and is dependent to other phenomena for its formation and is never formed primarily. In contrast, cancer is formed primarily. Another feature is that the vessels adjacent to non-cancerous swellings are stressed and have lower temperature upon touch compared to cancerous tumors. For painless swellings, this is the best sign of their benign nature. Rhazes' emphasized that during the initial stages of cancer, regular venesection and administration of black bile purgatives should be given to prevent accumulation of the disease forming humour. In addition blood thinning foods with cold nature should be administered to the patient. Avicenna described cancer is from the class of black bile swelling, which is caused by the accumulation of excess black bile, which is produced from burning of the yellow bile. After talking about the differential characteristics of cancer and scirrhus, he points that cancer frequently involves hollow organs and for this reason, its prevalence is higher among females. Organs with rich vascular supply are more prone to cancer. At early stages, cancer growth is unapparent. After progression, treatment of cancer would be difficult. Avicenna further described some features of cancerous growth as initially, it is the size of a broad bean or smaller, hard, spherical, dark and slightly warm, some of them have severe pain, while others have mild pain, with some being mostly painless. Some cancers are prone to ulceration but in some other cases, ulcerative cancer could become non-ulcerative. Avicenna warned that in some cases, manipulation of a tumor may lead to its ulceration. The nomenclature of this disease as cancer (crab) might be due to the similarity between the shape of a cancerous tumor affecting an organ and a crab with its prey. The designation may also be due to the sphericity and darkness of tumor and origination of vessels from its surroundings which resembles crab's

feet. For the management of cancers, Avicenna has clearly mentioned that the small cancerous tumor can be easily excised. If so, the tumor should be eliminated with some parts of adjacent normal tissues so that all tumor-feeding vessels may also be removed. After cutting the cancerous tumor, let it bleed until large blood volumes come out of the body. Mind that, purgation and venesection should have already been performed to cleanse the body from carcinogenic substances prior to excision. Body cleansing should be performed using proper foods (from both qualitative and quantitative aspects) in order to prepare the organ for cutting. In some occasions, it may be necessary to cauterize the scar. However, cauterization is contraindicated, if the cancerous tumor has come close to sensitive and vital organs.^[9]

Collectively it can be summed that black bile plays a pivotal role in the development of cancer. Black bile purgatives play an important role in early stages of cancer therapy. In advanced stages, with metastasis to other tissues, complete excision is the only therapeutic measure, followed by removal of all cancer roots and adjacent vessels. Unani physicians depends largely on herbal medicine for the treatment of cancer or halting its progression.

Integration of Unani Medicine in Cancer Management

The principles of Unani medicine can be utilized both for prevention and management of cancer. Unani medicine can be engaged in management of cancer both as a substitute to conventional chemotherapeutic agents as well as adjuvant. However, use of Unani drugs as a substitute to conventional chemotherapeutic agents requires thorough clinical trials and it is still in the stage of development. But as an adjuvant, it has been proved very fruitful.

Prevention of cancer

Prevention can be achieved by abiding the following principles of Unani Asbab Sitta Zarooriya (Six Prerequisites of Healthy Living by Unani medicine):^[10]

1. Air (Hawa)

- Fresh and pollution free air for breathing.
- Avoiding exposure to excessive heat or excessive cold.

2. Food and Drink (Makool o Mashroob)

- Stoppage of tobacco chewing and smoking.
- Avoiding junk and smoked foods, preserved foods, alcohol, carbonated drinks, etc.
- Avoiding excess of non-vegetarian diet.

- Avoiding black bile producing diets such as red meat, dried and salted meat and fish, etc.
 - Taking soft and easily digestible diets.
 - Consuming turmeric, tomatoes, garlic, flaxseed, spinach, broccoli, pomegranates, walnuts, etc.
 - Taking diet rich in fibre (20-30gm/day).
3. Bodily Movement and Repose (Harkat o Sukoon Badani)
 - Avoiding sedentary lifestyle.
 - Exercising for 30-45 minutes at least five days a week.
 4. Psychic Movement and Repose (Harkat o Sukoon Nafsani)
 - Avoiding mental stress and anxiety.
 - Avoiding extreme emotions, e.g. anger, fear, sadness.
 - Lead a spiritual peaceful life.
 5. Sleep and Wakefulness (Naum o Yaqza)
 - Sleeping for six to eight hours.
 6. Retention and Evacuation (Ihtibas o Istifragh)
 - Avoiding constipation.
 - Ensuring proper evacuation, urination, perspiration and menstruation.
 - Avoiding dehydration and ensure retention of electrolytes and minerals.

Use of Unani Medicine as a substitute to conventional chemotherapeutic agents

In the recent decades, there has been a dramatic increase in interest in the use of herbal drugs to kill cancer cells. Unani herbal drugs might be potentially safe therapeutic candidates for the treatment of cancer. Several preclinical *in vitro* and *in vivo* studies have reported anticancer activity of some Unani medicinal plants extracts on different human cancer cell lines and in animal models. Several studies have revealed that natural products exhibit an extensive spectrum of biological activities such as, stimulation of the immune system, antibacterial, antiviral, anti-hepatotoxic, anti-ulcer, anti-inflammatory, antioxidant, anti-mutagenic, and anti-cancer effects.^[11-15] In addition, a number of medicinal plants and herbs have also been reported to reduce the risk of cancer in multiple sites.^[16-17] Many commonly used anti-cancer herbs possess chemopreventive effects within their diverse pharmacological properties. Since cancer evolves over a long period of time, agents that inhibit or retard one or more of its stages could affect the overall course of the disease.

Qamar Uddin et al review the salient findings of preclinical studies of 20 Unani medicinal plants for their anticancer activity. These findings provide a good base for clinical trials. These Unani medicinal herbs may be valuable for optimizing the conventional anticancer therapy; and they can be used in combination with conventional anticancer drugs as a supportive therapy to improve health-related quality of life (HRQoL) of cancer patients. However, clinical studies of these herbs need to be conducted for possible alternative medical treatment of cancer.^[18]

Use of Unani Medicine in the management of cancer as an adjuvant

Early detection leads to better prognosis. Unani treatment may be used as an adjuvant therapy for the following purposes in cancer patients:^[10]

- To restore the healthy lifestyle by observing Asbab Sitta Zarooriyya (Unani Six Prerequisite for healthy Living).
- To enhance the immunity of the patient.
- To reduce the complications associated with cancer.
- To prevent the side-effects of the conventional cancer therapies.
- To improve the quality of life of the patients.

To enhance the immunity

A number of Unani formulations act as immune-modulator which may be prescribed with full confidence to the patients. The names of few are given below:

- Khamira Marward^[19]
- Tiryag-e-Wabai^[20]
- Khusta Til Kalan^[21]

To reduce the complications associated with cancer and to prevent the side-effects of the chemotherapy

The common side effects caused by cancer treatment usually include anemia, appetite loss, bleeding and bruising (thrombocytopenia), constipation, delirium, diarrhea, edema, fatigue, hair loss (alopecia), infection and neutropenia, memory or concentration problems, mouth and throat problems, nausea and vomiting, nerve problems (peripheral neuropathy), pain, sexual and fertility problems (men), sexual and fertility problems (women), skin and nail changes, sleep problems, urinary and bladder problems.^[22]

The list of Unani medicines having beneficial effects against each of the side-effects is given below:^[23]

Side effects	Useful Unani Medicines
Anemia	Sharbat Faulad, Majoon Azraqi, Arq-e-Maul-laham, Sharbat Ward
Appetite Loss	Jawarish Bisbasa, Hab-e-Tursh Mushtahi, Namak-e-Sulemani
Bleeding and Bruising (Thrombocytopenia)	Sharbat Anjbar, Qurs kahruba, Qurs kafoor, Qurs Sartan
Constipation	Itrifal Zamani, Qurs Mullayan, Itrifal Sanai
Delirium	Majoon Falasfa, Khamira Abresham, Khamira Gauzaban,
Diarrhea	Jawarish Mastagi, Hab-e-Ral
Edema	Sharbat Bazoori Mautadil,
Fatigue	Jawahar Mohra
Hair Loss (Alopecia)	Jawarish Amla, Jawarish Jalinoos
Infection and Neutropenia	Qurs kafoor, Arq-e Hara Bhara
Memory or Concentration Problems	Majoon Falasfa, kahamira Abresham, Khamira Gauzaban
Mouth and Throat Problems	Sharbat Tooth Siyah, Lauq khayarshambar, Lauq Sapistan
Nausea and Vomiting	Jawarish Anarain, Jawarish Tamarhindi,
Nerve Problems (Peripheral Neuropathy)	Hab-e-Asgandh, Hab-e-Azraqi
Sexual and Fertility Problems (Men)	Majoon Arad Khurma, Laboob-e-Kabir, Majoon Pambadana
Sexual and Fertility Problems (Women)	Majoon Suparipak, Majoon Mochras, Majoon Hamal Ambari
Skin and Nail Changes	Hab-e-Mussafi khoon, Itrifal Shahtara, Majoon Ushba
Sleep Problems	Hab-e-Shifa, Roghan-e-Laboob Saba,
Urinary and Bladder Problems	Sharbat bazoori, Jawarish Zarooni, Dawa-ul-Kurkum

- **Unani formulations with proven hepato-protective activity:** Majoon Dabidulward,^[24] Kabideen,^[25] Sharbat-e-Deenar,^[26] Jigreen.^[27]
- **Unani formulations with proven Nephro-protective activity:** Jawarish Zarooni Sada.^[28]
- **Unani formulations with proven Cardio-protective activity:** Khamira Abresham Hakim Arshad wala.^[29]
- **Unani formulations with proven Neuro-protective activity:** Majun Khadar [30], Majun Baladur.^[31]

To improve the quality of life of the patients

Unani Regimenal therapy is an excellent way of improving quality of life in cancer patients. Regimenal therapy (Ilaj bi Tadbeer) is a non-pharmacological modality of treatment in Unani medicine. It includes regimens like Hammam, Dalak, Shumum, Riyazat, Hijamat, Fasd, etc. These regimens are well known to the modern world by various names and the researchers all over the world have proved their efficacy and safety in one or the other indication. A tabular review of the regimens with their description in Unani medicine and references of their efficacy on the modern parameters is presented below to prove the effectiveness of these regimens in improving the QOL of cancer patients. The regimens that would be most befitting to cancer patients include the following:

Regimen	Description in Unani Medicine	References
Dalak known as Massage therapy	<p>In Unani medicine, Dalak is done by applying pressure or friction, kneading, rubbing, tapping, pounding, vibrating or stimulating against the external soft parts of the body with hands or other objects like rough cloth with or without oils, creams, lotions, ointments or other similar preparations, is applied to body.</p> <p>Kamal et al has published a complete review of Dalak (Massage) in Unani Medicine.^[37]</p>	<p>A systematic review of 22 articles examining the effect of massage on relaxation, comfort, and sleep was conducted by Richards et al.^[32] The massage was found to be anxiolytic. In a review, eight research papers reported significantly decreased anxiety or perception of tension with massage. Seven of 10 studies found that massage produced physiologic relaxation, as indicated by significant changes in the expected direction in one or more physiologic indicators. In the three studies in which the effect of massage on discomfort was investigated, it was found to be effective in reducing pain. In three studies the effect of massage on sleep was examined.</p>
Hammam Known as Balneotherapy	<p>The detailed description of Hammam in Unani medicine along with its application in various diseases has been published by Javed et al.^[38]</p>	<p>A randomized pilot trial was conducted to study the role of hyperthermic baths in patients with depressive disorder.^[33] This pilot study suggests that hyperthermic baths do have generalized efficacy in depressed patients. In another study the spa therapy shows a potential approach for breast cancer rehabilitation.^[34] A study conducted on 34 children aged 10-15 years in long-term remission of acute lymphoblastic leukemia, adjuvant balneotherapy promoted improvement in the heart rate and decreased asymmetry of circulation.^[35]</p>

<p>Shamum known as Aromatherapy</p>	<p>Aromatherapy uses fragrances or scents that are completely natural and are derived from flowers, resins, wood, roots, fruits, herbs, leaves, seeds etc. Besides, aromatic substances can also be ingested and taken internally as medicines; a concept unique to Unani system of medicine, i.e., use of Mufarehaat (exhilarant herbs) orally.</p> <p>A complete review has been published by the author: Aromatherapy: The Practice of Aroma's in Unani Medicine.^[39]</p>	<p>A systematic review was done by Boehm et al.^[36] to evaluate the benefits of aromatherapy for cancer patients such as reduced anxiety levels and relief of emotional stress, pain, muscular tension and fatigue. The review concluded that Aromatherapy/essential oils are useful for short-term benefit in regard to reducing anxiety and depression symptoms and to increase sleep patterns and wellbeing in cancer patients.</p>
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CONCLUSION

Unani medicine is a holistic approach to cancer care. The primary aim of this review is to highlight and discuss the scope of integration of Unani medicine in cancer management. The paper reviews the role, Unani medicine can play in prevention and management of cancer. The appraisal has been made to integrate Unani medicine both as an adjuvant as well as substitute to conventional chemotherapy. There are pharmacological studies available which are suggestive of Unani medicinal plants for their anticancer effects; these can be developed as anticancer therapeutic agents in order to fight this deadly disease. Hence, it can be concluded that Unani herbal drugs can be considered as promising chemotherapeutic agents. Similarly, the role of Unani medicine as an adjuvant to conventional chemotherapy is evidence based and cannot be neglected. These Unani herbal drugs and regimens when combined with conventional anticancer therapy may help to synergize the anticancer effects, and reduce the side effects of conventional drugs, to improve the patient's QOL, and to prevent cancer recurrence.

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