ACTA PHARMA REPORTS

Review Article | Journal homepage: https://pharma.researchfloor.org/ | ISSN: 3041-5381

Unani System of Medicine: Historical Evolution, Theoretical Foundations, Therapeutic Principles, and Contemporary Integration – A Comprehensive Review

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ABSTRACT

The Unani System of Medicine, also referred to as Graeco-Arabic Medicine or Unani Tibb, represents one of the world's oldest and most enduring traditional medical systems, with a documented history spanning approximately 2,500–2,700 years. Rooted in the humoral theories of ancient Greece as articulated by Hippocrates (460–377 BC) and Claudius Galenus (129–210 AD), and subsequently enriched by the intellectual contributions of eminent Arabian and Persian scholars — most notably Ibn Sina (Avicenna, 980–1037 AD), Muhammad ibn Zakariya al-Razi (854–932 AD), Abu al-Qasim al-Zahrawi (936–1013 AD), and Ibn Nafis (1213–1288 AD) this system has evolved into a holistic and comprehensive framework for the diagnosis, prevention, and treatment of disease. The theoretical architecture of Unani medicine is based on the doctrine of seven fundamental physiological principles (al-Umoor al-Tabiyah), the concept of four humours (Akhlat), the framework of temperament (Mizaj), and the six essential prerequisites of health (Asbab-e-Sitta-e-Zarooriya). Unani pharmacopoeia encompasses more than 2,000 medicinal substances derived approximately 90% from herbal, 4–5% from animal, and 5–6% from mineral sources. The therapeutic modalities of Unani medicine,Ilaj-bil-Tadbeer (regimental therapy), Ilaj-bil-Dawa (pharmacotherapy), and Ilaj-bil-Yad (surgery) reflect a sophisticated, evidence-informed approach to restoring homeostasis. This review provides a detailed, critical synthesis of the historical evolution, doctrinal foundations, pharmacological principles, pharmacovigilance dimensions, and contemporary relevance of the Unani system, drawing upon classical textual sources and recent peer-reviewed literature. The paper also identifies current challenges and opportunities for integrating Unani medicine within modern evidence-based healthcare frameworks.

Keywords: *Unani medicine, Mizaj, Akhlat, al-Umoor al-Tabiyah, pharmacovigilance, regimental therapy, Ibn Sina, humoral theory, Asbab-e-Sitta-e-Zarooriya, herbal medicine.*

1. Introduction

The Unani System of Medicine (USM) also known as Graeco-Arabic Medicine, Unani Tibb, or Greco-Arab Medicine, is one of the oldest and most systematically developed traditional medical systems in human history, with its origins traceable to ancient Greece approximately 2,500–2,700 years ago [1,2].The word 'Unani' is derived from the Arabic transliteration of 'Ionian', referring to the coastal Greek civilization from which the foundational concepts of this system emerged. Today, Unani medicine is widely practiced across South Asia, Central Asia, the Middle East, and increasingly in Southeast Asia and Africa, representing a significant portion of the global traditional medicine landscape [1,3].The World Health Organization (WHO) estimates that approximately 80 percent of the world's population rely on traditional herbal medicines for some aspects of their primary healthcare needs, with Unani medicine constituting a major component of this practice in countries such as India, Pakistan, Bangladesh, Afghanistan, and Iran[2,4].In India, the Unani system is officially recognized by the Government of India under the AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy) ministry, with an established network of Unani medical colleges, hospitals, and research institutions operating alongside the conventional allopathic medical system [3,5].Despite its historical prominence and extensive documentation, Unani medicine continues to face challenges related to scientific validation, standardization, pharmacovigilance, and integration within modern evidence-based medicine frameworks. A growing body of contemporary research is, however, beginning to validate many of the empirical observations and therapeutic interventions documented by classical Unani scholars across more than a millennium of continuous medical practice [6,7].This review paper aims to provide a comprehensive, scholarly synthesis of the Unani system of medicine, encompassing its historical development, doctrinal foundations, theoretical framework, pharmacological basis, modes of therapy, pharmacovigilance principles, and contemporary relevance, while critically evaluating the opportunities and challenges that characterize its present status within the global healthcare landscape.

15 March 2025: Received
11 May 2025: Revised
02 June 2025: Accepted
01 July 2025: Available Online

Citation: Syed Aqib Feroz, Azizur Rahman, Huda Nafees, and Muhammed Nadeem Khan (2025). Unani System of Medicine: Historical Evolution, Theoretical Foundations, Therapeutic Principles, and Contemporary Integration – A Comprehensive Review. *Acta Pharma Reports.*
DOI: https://doi.org/10.51470/APR.2025.04.01.59

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2. Historical Development of Unani Medicine

2.1 Greek Origins and Foundational Scholars

The historical genesis of Unani medicine lies within the intellectual tradition of ancient Greece, where the foundations of rational, empirical medicine were first established in contradistinction to the dominant magical and religious approaches to health and disease that characterized earlier civilizations. The development of Unani medicine as a coherent medical system owes its earliest and most fundamental conceptual debt to Hippocrates of Cos (Buqrat in Arabic, 460–377 BC), universally acknowledged as the 'Father of Medicine' and the foundational architect of Unani medical theory[1,8].Hippocrates introduced the landmark doctrine of four humours: Dam (Blood), Balgham (Phlegm), Safra (Yellow Bile), and Sauda (Black Bile),which posited that the balance of these four body fluids determined the state of health, while their derangement in quality or quantity led to disease. His comprehensive materia medica, systematic approach to clinical observation, and rational etiology of disease represented a paradigm shift of historic proportions[8,9].*Claudius Galenus* (Jalinoos in Arabic, 129–210 AD), the eminent Roman physician and polymath, subsequently synthesized and systematically expanded Hippocratic doctrines, developing a comprehensive theoretical and pharmacological framework that would define Unani medicine for over a millennium. Galen's contributions included extensive anatomical investigations, detailed pharmacological characterizations of hundreds of medicinal substances, and a systematic elaboration of the humoral and temperamental framework[1,10].

Table 1: Timeline of Key Scholars in the Development of Unani Medicine

Scholar (Arabic Name)	Period	Country/Region	Major Contribution
Hippocrates (Buqrat)	460–377 BC	Greece	Doctrine of four humours; rational medicine; Hippocratic Corpus; Father of Unani Medicine
Dioscorides	40–90 AD	Greece/Rome	Materia Medica, first comprehensive illustrated pharmacopoeia of ~600 medicinal plants; founder of IlmulAdvia
Claudius Galenus (Jalinoos)	129–210 AD	Rome	Systematized humoral theory; anatomical investigations; comprehensive pharmacology; ~400 medical works
Muhammad ibn Zakariya al-Razi (Rhazes)	854–932 AD	Persia (Iran)	Kitab al-Mansoori; clinical differentiation of smallpox and measles; empirical pharmacology; chemistry
Ali ibn Abbas al-Majusi	930–994 AD	Persia (Iran)	Kamil-us-Sana (Kitab al-Maliki); detailed clinical medicine and surgery; described capillary system
Abu al-Qasim al-Zahrawi (Albucasis)	936–1013 AD	Andalusia (Spain)	Al-Tasrif,surgicalencyclopedia; invented >200 surgical instruments; Father of Modern Surgery
Ibn Sina (Avicenna)	980–1037 AD	Persia (Iran)	Al-Qanoon fit-Tib — Canon of Medicine; encyclopedic pharmacology (>2000 drugs); clinical pharmacology principles
Ibn Rushd (Averroes)	1126–1198 AD	Andalusia (Spain)	KitabulKulliyat; systematization of physiology; commentaries on Galen and Aristotle
Ibn Nafis	1213–1288 AD	Syria/Egypt	Discovery of pulmonary circulation; commentary on Ibn Sina's Canon; ophthalmology
Ismail al-Jurjani	1042–1137 AD	Persia (Iran)	Zakhira-e-Khwarazmshahi — comprehensive Persian medical encyclopedia

Source: *Compiled from References [1, 8–12, 15, 16, 17].*

2.2 The Islamic Golden Age and Arabian Contributions

The most transformative period in the evolution of Unani medicine was unquestionably the Islamic Golden Age (8th–13th centuries AD), during which Arab and Persian scholars not only preserved and translated the Greco-Roman medical heritage but fundamentally expanded, systematized, and enriched it through sustained clinical observation, pharmacological investigation, and systematic experimentation [11,12].Ibn Sina'sencyclopedic Al-Qanoon fit-Tib (The Canon of Medicine) stands as arguably the most influential medical text in world history, serving as the primary reference text in European and Islamic medical education for nearly seven centuries. The Qanoon contains detailed pharmacological characterizations of 811 simple drugs in its second book, among which 594 (73.7%) are of vegetable kingdom origin, 118 (14.5%) of animal kingdom, and 99 (12.2%) of mineral origin [13,14].Abu al-Qasim al-Zahrawi's monumental Al-Tasrif li-man 'Ajiza 'an al-Ta'lif introduced systematic surgical procedures and an innovative collection of over 200 surgical instruments, including scalpels, curettes, retractors, forceps for fetal extraction, and various specula that transformed the practice of surgery and constituted a foundational reference for European surgical practice for several centuries[1,15].The discovery of pulmonary blood circulation by Ibn Nafis (1213–1288 AD), predating William Harvey's confirmation by three centuries, exemplifies the profound scientific contributions of Unani scholars that extended far beyond the Galenic framework they inherited [16].

2.3 Development in the Indian Subcontinent

Unani medicine was introduced to the Indian subcontinent through the Arab, Turkish, and Afghan invasions beginning in the 11th century AD, and subsequently flourished under Mughal patronage. Over the succeeding centuries, it underwent significant indigenization, incorporating elements of Ayurvedic pharmacology and clinical practice while retaining its Greco-Arabic theoretical and doctrinal framework [17,18]. The Government of India, recognizing its historical, cultural, and therapeutic significance, has established comprehensive institutional structures for the formal education, research, and practice of Unani medicine, including the Central Council for Research in Unani Medicine (CCRUM), the Central Council of Indian Medicine (CCIM), and the National Institute of Unani Medicine (NIUM), Bangalore[5,18].

3. Doctrinal Framework: The Seven Physiological Principles (Al-Umoor Al-Tabiyah)

The philosophical and physiological foundation of Unani medicine rests upon the doctrine of seven fundamental physiological principles, collectively known as al-Umoor al-Tabiyah (Natural Physiological Principles) or UmooreTabaiyah. According to the Unani concept, the health of the human body is maintained through the dynamic homeostasis of these seven interrelated components. Each individual's constitution possesses a self-regulating capacity or power — termed Tabiyat (also called Mudabbira-e-Badan, literally 'the regulator of the body') — which functions as the body's inherent defense and restorative mechanism, analogous to but distinct from the modern immunological concept [1,2,3].

Table 2: The Seven Fundamental Physiological Principles (al-Umoor al-Tabiyah) of Unani Medicine

No.	Principle (Arabic)	English Equivalent	Description
1	**Arkan (Anasir)**	Elements (Four Primary Elements)	Four primary states of matter: Naar (Fire — hot & dry), Hawa (Air — hot & wet), Ma (Water — cold & wet), Arz (Earth — cold & dry). All creation, including the human body, is composed of these four elements in varying proportions.
2	**Mizaj**	Temperament	The characteristic quality arising from the interaction and mutual counteraction of the four elements' contrary qualities. Determines the individual constitution and health predispositions. Nine types: one balanced (Mutadil) and eight imbalanced (Sue Mizaj).
3	**Akhlat**	Humours (Body Fluids)	Four primary body fluids: Dam (Blood — hot & wet), Balgham (Phlegm — cold & wet), Safra (Yellow Bile — hot & dry), Sauda (Black Bile — cold & dry). Their balance determines health; imbalance causes disease.
4	**Aaza**	Organs	Organs of the human body, classified as: Aaza-e-Mufridah/Baseetah (simple organs: cells and tissues) and Aaza-e-Murakkebah/Aliyah (compound/composite organs). Health or disease of each organ affects the whole body.
5	**Arwah**	Vital Spirit (Pneuma)	Subtle constituents derived from atmospheric air, considered the carriers of the three fundamental faculties. Essential for sustenance of life; distributed through blood and nervous system.
6	**Quwa**	Faculties / Powers	Three fundamental faculties: QuwaTabiyya (Natural faculty — liver; nutrition, growth, reproduction), QuwaHaywaniya (Vital faculty — heart; life force, pulse), QuwaNafsania (Psychic faculty — brain; sensation, voluntary movement).
7	**Af'al**	Functions	Physiological functions performed by organs and faculties. Proper function of all organs is essential for health; malfunction contributes to pathological states.

Source: *Compiled from References [1, 2, 3, 6, 19].*

3.1 The Doctrine of Arkan (Elements)

The concept of four primary elements (Arkan or Anasir) forms the bedrock of Unani cosmology and physiology. According to this doctrine, all matter, including the human body, is constituted from four fundamental elements: Naar (Fire), Hawa (Air), Ma (Water), and Arz (Earth), each possessing specific dual qualities. Fire is hot and dry; Air is hot and wet; Water is cold and wet; and Earth is cold and dry. These elements represent four states of matter: Hawa (gaseous), Ma (liquid), Arz (solid), and Naar (energy/heat). Their interaction in varying proportions determines the Mizaj (temperament) of all creation[1,3,6].

3.2 The Doctrine of Mizaj (Temperament)

Mizaj is perhaps the most clinically pivotal concept in Unani medicine and constitutes the most individualized dimension of the system. It refers to the characteristic quality that emerges from the mutual interaction and counteraction of the contrary qualities of the four elements, a resultant quality distinct from any of the constituent elements alone [1,2,3].

Mizaj is classified into nine types: one equitably balanced temperament (Mizaj-e-Mutadil) and eight imbalanced temperaments (Mizaj-e-GhairMutadil): four simple imbalances (hot, cold, wet, dry) and four compound imbalances (hot-wet, hot-dry, cold-wet, cold-dry). Each individual possesses a unique constitutional temperament; this baseline constitution, when disturbed, represents the pathological temperament known as Sue Mizaj, which is the central target of Unani therapeutic intervention [2,3,6].

3.3 The Doctrine of Akhlat (Humours)

The doctrine of four humours, introduced by Hippocrates and elaborated by Galen, Razi, Ibn Sina and subsequent scholars, constitutes the central pathophysiological framework of Unani medicine. The four humours, Dam, Balgham, Safra, and Sauda are conceived as the four primary body fluids produced from ingested food through a process of progressive elaboration. Their balance in quality and quantity determines health; their derangement produces disease [8,9,19].

Table 3: The Four Humours (Akhlat),Properties, Temperaments and Pathological States

Humour	Arabic Name	Temperament	Corresponding Constitution	Site of Production	Pathological State
Blood	Dam	Hot & Wet	Sanguine (Damvi)	Liver & Heart	Excess: inflammatory disorders, fever, skin eruptions, hypertension
Phlegm	Balgham	Cold & Wet	Phlegmatic (Balghami)	Liver	Excess: respiratory disorders, edema, obesity, mucous disorders
Yellow Bile	Safra	Hot & Dry	Choleric (Safrawi)	Gallbladder/Liver	Excess: biliary disorders, fever, skin diseases, gastritis
Black Bile	Sauda	Cold & Dry	Melancholic (Saudawi)	Spleen	Excess: psychological disorders, melancholy, chronic diseases, cancer

Source: *Compiled from References [1, 2, 8, 9, 19, 20].*

3.4 The Concept of Tabiyat (Physis / Nature)

Tabiyat is one of the most profound and philosophically sophisticated concepts in Unani medicine, representing the body's inherent self-regulatory, restorative, and defensive capacity. Derived from the Greek concept of Physis, the natural healing power that Hippocrates identified as the principal healer in all diseases, Tabiyat in Unani medicine is defined as the sum total of the structural, functional, and psychological character of the human being [2,21].According to Unani scholars, it is ultimately Tabiyat, not the physician or the drug, that cures disease. The physician's role is to support, assist, and facilitate the action of Tabiyat from 'outside' by prescribing appropriate therapeutic interventions. When Tabiyat is strong, the individual resists disease effectively; when Tabiyat is weakened, susceptibility to disease increases significantly[2,22].This concept has direct relevance to modern immunological theory, where the body's immune system functions as the primary defense against disease, and clinical intervention serves primarily to support or modulate this inherent defense capacity. The term 'Tabeeb' (Unani physician) is etymologically derived from the same root as the Greek 'Physicus', from which the modern English 'Physician' derives, a striking etymological convergence reflecting the shared philosophical foundations [7,21].

4. The Six Essential Prerequisites of Health (Asbab-E-Sitta-E-Zarooriya)

One of the most clinically innovative and practically relevant frameworks in Unani medicine is the doctrine of six essential prerequisites, Asbab-e-Sitta-e-Zarooriya (literally 'the Six Necessary Causes'). This doctrine identifies six environmental and lifestyle factors that are universally experienced by all human beings and whose quality, quantity, and regularity determine the maintenance of health or the onset of disease [1,2,3].The six essential factors bear a remarkable conceptual correspondence to the modern public health emphasis on environmental determinants of health, lifestyle medicine, and preventive cardiology.

They represent an early articulation of what contemporary medicine would recognize as the biopsychosocial determinants of health [7,23].

Table 4: The Six Essential Prerequisites of Health (Asbab-e-Sitta-e-Zarooriya)

No.	Arabic Term	English Translation	Health-Maintaining Function	Pathological Consequence of Disturbance
1	**Hawa (Air)**	Atmospheric Air / Environment	Provides oxygen essential for vital functions; regulates body temperature; enables Arwah (vital spirit)	Polluted air → respiratory diseases; climate extremes → temperamental derangement
2	**MakoolatwaMashroobat**	Foods and Drinks / Nutrition	Primary source of humour generation; maintains structural integrity and energy	Malnutrition, poor diet quality → humoral imbalance, chronic disease states
3	**Harkat waSukoon-e-Badni**	Physical Activity and Rest	Exercise strengthens organs, improves circulation; rest enables repair and regeneration	Excess activity → exhaustion, joint disease; insufficient activity → obesity, circulatory disorders
4	**Harkat waSukoon-e-Nafsani**	Mental Activity and Emotional State	Psychological equilibrium supports Tabiyat; positive emotions promote health	Psychological stress, grief, anxiety → autonomic dysregulation, immune suppression
5	**NaumwaYaqza**	Sleep and Wakefulness	Sleep enables restoration, digestion, and physical and mental recuperation	Sleep deprivation → cognitive dysfunction, metabolic disorders, weakened Tabiyat
6	**IhtibaswaIstifragh**	Retention and Elimination	Normal retention ensures adequate nourishment; elimination removes morbid material	Abnormal retention → accumulation of Mawad-e-Fasida; defective elimination → toxin accumulation

Source: *Compiled from References [1, 2, 3, 7, 19, 23].*

5. Theory of Health And Disease in Unani Medicine

5.1 Unani Concept of Health

In Unani medicine, health is conceptualized as a dynamic state of equilibrium characterized by the balance of four humours in appropriate quality and quantity, the normal functioning of all organs and their constituent faculties, and the harmonious interaction of the six essential factors. This multidimensional conception of health demonstrates a remarkable congruence with the WHO's definition of health as 'a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity'[2,24].

5.2 Etiology of Disease

Disease in Unani medicine arises from disturbances in the equilibrium of humours and temperament, caused by derangement of one or more of the six essential factors.

Etiology is classified into two broad categories: AsbabDakhilia (internal causes), encompassing diseases arising from Sue Mizaj (ill temperament) or Sue Tarkeeb (structural deformity of body organs) and AsbabKharjiya (external causes), encompassing emotional, physical, chemical, microbial, and environmental factors [1,3,6].

5.3 Classification of Diseases

Unani medicine classifies diseases into three broad primary categories based on the nature of the pathological process, with numerous subcategories providing a comprehensive nosological framework: [1,6]

Table 5: Classification of Diseases in Unani Medicine

Category (Arabic)	English Translation	Definition and Examples
Primary Categories		
1. Amraz Sue Mizaj	Temperamental Diseases	Diseases arising from qualitative change in the temperament of an organ, system, or whole body. May be inherited or acquired. E.g., inflammatory diseases, fever disorders, metabolic conditions.
2. Amraz Sue Tarkeeb	Structural/Compositional Diseases	Diseases arising from abnormal structure or composition of organs. E.g., congenital malformations, neoplastic disorders, organ structural deformities.
3. AmrazTafarruq-e-Ittisal	Discontinuity Diseases	Diseases arising from disruption of tissue continuity. Kasr (Fracture), Jurh (Wound), Fitaq (Hernia), Qur'ha (Ulcer).
Secondary Classifications		
Amraz Mufrada	Simple Diseases	Diseases affecting a single organ or system.
Amraz Mutaddiya	Communicable Diseases	Infectious diseases transmitted from person to person.
Amraz Mutawarisa	Hereditary/Genetic Diseases	Diseases transmitted through genetic inheritance.
Amraz Zahira waBatina	External & Internal Diseases	Superficial vs. deep-seated diseases.
AmrazHaddawaMuzmina	Acute and Chronic Diseases	Temporally distinguished disease categories.
AmrazAsliyawaShirkiya	Primary and Secondary Diseases	Distinguishes causative from consequential pathology.

Source: *Compiled from References [1, 3, 6, 19].*

6. Principles of Diagnosis in Unani Medicine

Unani diagnostic methodology is comprehensive and multimodal, integrating physical examination, clinical observation, pulse examination, urine analysis, and temperament assessment into a systematic diagnostic framework that functions without reliance on laboratory investigations or imaging technology.[1,3]

6.1 Assessment of Mizaj (Temperament Assessment — Ajnas-e-Ashra)

The assessment of the patient's Mizaj is the cornerstone of Unani diagnosis. The pathological change in Mizaj, termed Sue Mizaj, is identified through analysis of ten specific determinants, collectively known as Ajnas-e-Ashra-e-Mizaj (Ten Determinants of Temperament).

The identification of the dominant Sue Mizaj guides the selection of all therapeutic interventions[1,3,25].

- **Malmas (Palpation):** Assessment of skin texture, temperature, and moisture through tactile examination.
- **LahamwaShaham (Flesh and Fat):** Assessment of musculature and adipose tissue distribution.
- **Shaar (Hair):** Texture, distribution, and characteristics of body hair.
- **Laun-al-Badan (Body Colour/Appearance):** Skin colour and overall physical appearance.
- **Sahna/Haiyat-al-Aza (Physique):** Overall body structure and organ proportions.
- **Kaifiyat-e-Infal (Organ Responsiveness):** Reactivity and functional responses of organs.

- **NaumwaYaqza (Sleep and Wakefulness):** Patterns of sleep and wakefulness.
- **Afal-ul-Aza (Organ Functions):** Performance of organ-specific physiological functions.
- **Fuzlat-e-Badan (Body Excreta):** Quality and quantity of physiological excretions.
- **Infalat-e-Nafsania (Psyche):** Psychological state, emotional responses, and cognitive function.

6.2 Muaina-e-Nabz (Pulse Examination)

Pulse examination (Muaina-e-Nabz) occupies a position of central importance in Unani clinical diagnosis, with classical texts describing hundreds of distinctive pulse types corresponding to specific disease conditions and physiological states. Ten fundamental characteristics of the pulse are systematically assessed: [1,3].

Table 6: Ten Characteristics of Nabz (Pulse) in Unani Diagnosis

Characteristic (Arabic)	English Meaning / Clinical Significance
Miqdar-e-Imbesat	Degree of arterial expansion — reflects cardiac output and vascular compliance
Kaifiyat-e-Qara	Impaction quality on examining fingers — reflects arterial wall tension
Zamana-e-Harkat	Duration of arterial movement — reflects cardiac cycle characteristics
Qiwam-e-Ala	Texture of the artery — reflects vascular wall consistency
KhalawaImtala	Emptiness or fullness of artery — reflects circulating blood volume
Malmas	Feeling of hot or cold in artery — reflects core temperature and metabolic state
Zamana-e-Sukoon	Duration of diastolic rest — reflects diastolic function
IstawawaIkhtalaf	Equality or inequality of successive beats — reflects cardiac rhythm regularity
Nizam waAdmenizam	Regularity or irregularity of pulse — identifies arrhythmias
Wazn	Rhythm of pulse — overall pulsatile pattern

Source: *References [1, 3, 25].*

6.3 Muaina-e-Bol (Urine Examination)

Following pulse examination, Unani physicians conduct systematic urine examination (Muaina-e-Bol/Mushahida-e-Bol) as the third pillar of diagnosis. Classical Unani texts describe seven characteristic features of urine that are methodically assessed: [1,3,26].

- Laun (Colour), Qiwam (Consistency), SafaiwaKadoorat (Clarity and Turbidity), Boo (Odour), Jhag/Kaf (Foam), Rasub (Sediment), and Miqdaar (Quantity).

This systematic approach to urine analysis, developed centuries before modern urinalysis, demonstrates the sophisticated clinical reasoning of classical Unani physicians and represents an early form of structured physiological assessment that remains clinically informative within the Unani framework.

7. Therapeutic Modalities in Unani Medicine (Usool-E-Ilaj)

Unani medicine employs a hierarchical, sequentially applied framework of therapeutic modalities, guided by the fundamental principle of utilizing the least invasive and most natural interventions in the first instance, escalating to more active interventions only when simpler measures prove insufficient. According to Ibn Sina's systematic schema in Al-Qanoon fit-Tib, 'treatments are done in three ways: one of them is regimen and nutrition; the second, application of drugs; and the third, manual treatment, i.e., surgery' [13,14].

7.1 Ilaj-bil-Tadbeer (Regimental Therapy)

Regimental therapy (Ilaj-bil-Tadbeer) is the foundational and most philosophically coherent therapeutic modality of Unani medicine, predating pharmacotherapy in the clinical hierarchy and representing the system's most distinctive contribution to preventive and curative medicine. It is defined as the application of specific non-pharmacological techniques or physical methods of treatment that improve the body's constitution by removing waste materials, modulating the six essential factors, and enhancing the Tabiyat (defensive mechanism) [1,2,3].Regimental therapy is carried out through deliberate modification and modulation of the Asbab-e-Sitta-e-Zarooriya. Its aim is dual: Istifraagh-e-Akhlaat-e-Radiya (evacuation of morbid humours) and Tadeel-e-Mizaj (restoration of normal temperament). As soon as morbid humours are evacuated through appropriate regimens, natural health homeostasis is restored [1,2,27].

Table 7: Modalities of Ilaj-bil-Tadbeer (Regimental Therapy)

Modality (Arabic)	English Term	Mechanism and Application	Modern Equivalent / Evidence
Ilajbi'l-Ghiza	Dietotherapy	Prescription of specific dietary regimens based on disease temperament to correct humoral imbalance and support Tabiyat	Nutritional medicine; Medical nutrition therapy
Ilajbi'l-Hijama	Cupping Therapy	Dry or wet cupping to evacuate morbid humours from specific body regions; widely used in musculoskeletal and inflammatory conditions	Cupping therapy — growing evidence base in musculoskeletal conditions
Ilajbi'l-Taleeq	Leech Therapy	Application of medicinal leeches (Hirudomedicinalis) for evacuation of corrupt blood from specific tissues; used in dermatological and vascular conditions	Hirudotherapy — approved in reconstructive surgery in some countries
Ilajbil-Fasd	Venesection / Bloodletting	Therapeutic phlebotomy for evacuation of excess Dam (blood) in plethoric conditions	Therapeutic phlebotomy in polycythemia, hemochromatosis
Dalak	Massage	Therapeutic massage to improve circulation, promote lymphatic drainage, and relieve musculoskeletal disorders	Physiotherapy; Manual therapy
Riyazat	Exercise	Prescribed physical exercise programmes tailored to patient temperament and disease condition	Exercise prescription in lifestyle medicine
Nutool	Moist Fomentation	Application of moist heat to specific body regions for anti-inflammatory and analgesic effects	Thermotherapy; moist heat application
Bukhoor	Steam Bath	Whole-body or localized steam therapy for diaphoresis, detoxification, and respiratory conditions	Steam inhalation; hydrotherapy
Tareeq	Diaphoresis	Induction of therapeutic sweating for elimination of morbid material through skin	Hyperthermic treatment; sweat therapy
Qai	Emesis / Vomiting	Therapeutic induction of vomiting for evacuation of morbid gastric and upper gastrointestinal contents	Gastric lavage; clinical emesis
Idrar	Diuresis	Promotion of urinary output for elimination of morbid renal excretions	Forced diuresis; diuretic therapy
Hammam	Turkish Bath	Therapeutic bathing combining heat exposure, steam, and hydrotherapy	Balneotherapy; spa therapy
Kai	Cauterization	Therapeutic application of heat or chemical agents for haemostasis, tissue destruction, or scar formation	Electrocautery; chemical cauterization

Source: *Compiled from References [1, 2, 3, 27, 28, 29].*

7.2 Ilaj-bil-Ghiza (Dietotherapy) — Detailed Analysis

Dietotherapy holds a privileged position within the Unani therapeutic hierarchy, positioned as the first and most fundamental intervention to be attempted in all disease states. Unani scholars such as Avicenna, Hippocrates, and Rhazes explicitly advised that the physician should not interfere with Tabiyat in the initial stages of disease, and that energizing dietary measures should be the first intervention, as some diseases can be cured by diet alone [2,3,6].In chronic diseases, Unani scholars prescribed nutritious, proteinaceous diets in adequate quantity to counteract the wear and tear (Badane Ma Tehlul) caused by prolonged illness and to maintain the Tabiyat in its restorative combat against disease over an extended period. The Unani concept of Parhez (dietary restriction and avoidance) represents the positive counterpart of dietotherapy, specific foods and substances are identified that may aggravate a particular disease condition and are accordingly prohibited [2,6,30].

7.3 Ilaj-bil-Dawa (Pharmacotherapy)

Pharmacotherapy in Unani medicine is recommended when regimental therapy and dietotherapy prove insufficient in restoring health. It is significant that the Unani pharmacotherapeutic approach employs crude/whole drug therapy, active principles of medicinal substances are not isolated but are allowed to co-exist with other natural constituents, on the principle that the whole drug has superior therapeutic efficacy and safety compared to isolated active fractions, due to synergistic interactions among constituents and the modulating effects of inactive constituents on potential adverse reactions [2,5,7].The Unani pharmacopoeia is vast, encompassing more than 2,000 medicinal substances derived from herbal (~90%), animal (4–5%), and mineral (5–6%) sources. Dioscorides (40–90 AD), recognized as the founder of IlmulAdvia (Pharmacology), first compiled a comprehensive illustrated catalogue of medicinal plants; Ibn Sina subsequently systematized pharmacology into a scientifically organized discipline[5,9,13].

7.3.1 Principles of Pharmacotherapy

Two fundamental principles guide Unani pharmacotherapy: [2,3,7]

- **Ilaj-bil-Zidd (Principle of Contraries):** The primary therapeutic principle, a disease with a specific temperamental imbalance is treated with drugs of opposite temperament and quality. For example, a hot disease is treated with drugs of cold temperament; a condition of excess Balgham (cold-wet) is treated with hot-dry drugs. This principle has clear parallels with the pharmacological concept of symptomatic counter-intervention.
- **Ilaj-bil-Misl (Principle of Similars):** Used when diagnosis is difficult to ascertain with certainty. Drugs sharing the same temperament as the disease are employed, based on accumulated empirical clinical experience. Historical example: use of Arsenic (sankhya) in the treatment of syphilis.

7.3.2 MunzijwaMus'hil Therapy (Concoctive and Purgative Therapy)

Among the pharmacotherapeutic modalities of Unani medicine, MunzijwaMus'hil (Concoctive and Purgative) therapy occupies a particularly fundamental position, especially in the treatment of chronic diseases. This is perhaps the most distinctively Unani of all pharmacological interventions [2,19,31].Nuzj (concoction/maturation) is defined as the process by which disease-causing tenacious morbidities (Maddah Marz) are transformed to a state that can be feasibly eliminated from the body. Munzij drugs are administered for a finite duration to achieve this maturation, after which Mus'hil (purgative) drugs facilitate the actual evacuation of the matured morbid material[2,31].

Table 8: Duration of Munzij (Concoction) Phase Based on Humour Involved

Humour (Khilt)	Temperament	Duration of Munzij Phase	Clinical Significance
Safra (Yellow Bile)	Hot & Dry	**3–5 days**	Fastest concoction — due to its naturally more mobile quality
Balgham (Phlegm)	Cold & Wet	**5–12 days**	Intermediate duration — requires longer to overcome its cold, wet viscosity
Sauda (Black Bile)	Cold & Dry	**15–40 days**	Longest duration — thick, tenacious quality requires extended maturation

Source: *References [2, 19, 31].*

7.4 Ilaj-bil-Yad (Surgery)

Surgical treatment (Ilaj-bil-Yad or Ilaj-bil-Jarahat) represents the final resort in the Unani therapeutic hierarchy, employed when both regimental therapy and pharmacotherapy have failed to provide adequate relief, or in conditions where surgery is the primary indicated intervention from the outset [1,2,15]. Unani physicians were pioneers in the development of surgical techniques and instruments. Abu al-Qasim al-Zahrawi (Albucasis, 936–1013 AD) introduced a landmark collection of over 200 surgical instruments in the 30th volume of his encyclopaedic Al-Tasrif, including scalpels, curettes, retractors, spoons, sounds, hooks, rods, specula, and forceps for fetal extraction. His systematic approach to surgical procedures and instrument design formed the foundation of European surgery for several centuries [15,16,32].

8. Pharmacovigilance in Unani Medicine

8.1 Historical Dimensions of Drug Safety

The systematic concern with drug safety and adverse drug reactions in Unani medicine predates the establishment of modern pharmacovigilance by many centuries. Ibn Sina's detailed framework for pharmacological evaluation in Al-Qanoon fit-Tib constitutes perhaps history's earliest articulation of systematic drug testing principles. Ibn Sina stipulated that the drug must be tested under the following conditions: it must be free from physico-chemical influences; the disease for which it is tested must be simple (without complications); it should be tested for two opposite diseases; it must be in just proportion to the nature and severity of the disease; the initial effect of the drug is more natural than its perpetual effect; the drug's action should be observed in all or most cases; and the last experiment should be conducted on human bodies, not animals [13,14,33].

Unani physicians recorded adverse drug reactions in their Bayaz (notebooks) and communicated their clinical experiences to their pupils, a practice that represents an early form of prescription auditing, spontaneous reporting, and experiential knowledge transfer that anticipates modern pharmacovigilance systems[7,33,34].

8.2 Built-in Safety Mechanisms of Unani Pharmacotherapy

The Unani pharmacological framework incorporates several inherent mechanisms designed to minimize adverse drug reactions and maximize therapeutic safety: [7,34,35].

- **Darjat-e-Advia (Drug Potency Degrees):** All Unani drugs are classified in four degrees based on their temperamental potency and power of effectiveness. Higher degrees indicate greater potency and correspondingly greater risk of adverse effects. This hierarchical classification guides appropriate drug selection for individual patient temperaments.
- **Muslehat (Correctives):** Corrective agents are employed to minimize potentially undesirable effects of active medicinal constituents in compound formulations. They modify the action of the primary drug to optimize safety and therapeutic efficacy.
- **Tadbir (Processing and Purification):** Drugs toxic in their crude form undergo specific purification and processing procedures (Tadbir) before clinical use, substantially reducing their toxicity while preserving or enhancing their therapeutic properties.
- **Abdal al-Advia (Drug Substitution):** When a prescribed drug is unavailable, it may be substituted only by a drug of identical temperament and comparable potency. A hot-dry drug of first degree must be replaced by a hot-dry drug of first degree — an approach that ensures consistent therapeutic response and safety profile.
- **Parhez (Dietary Restrictions):** Dietary restrictions and food-drug interactions are explicitly documented for each therapeutic regimen, representing an early systematic approach to pharmaconutrition interactions.

8.3 Pharmacovigilance and Temperament Theory

The concept of Mizaj in Unani pharmacology has direct pharmacovigilance implications, representing an early individualized approach to drug therapy. As Ibn Sina explicitly articulated, a drug is not universally hot or cold in absolute terms, its effect is relative to the temperament of the individual patient. A drug hot relative to a human body may be cold relative to a scorpion; hot for one patient may be cold for another. This individualization of drug effects anticipates the modern pharmacogenomic understanding of inter-individual variation in drug response [34,35,36].Unani drugs of all origins (plant, animal, and mineral) are categorized into four degrees of temperamental potency, and their selection must match the temperament of both the disease and the patient. This matching process inherently serves a pharmacovigilance function by reducing the risk of adverse reactions through individualized therapeutic dosing [34,35].

8.4 Pharmacoenvironmentology and Unani Medicine

A distinctive and forward-looking dimension of Unani pharmacovigilance is its recognition of the environmental impact of medicinal substances, a concept now formalized as Pharmacoenvironmentology. The Unani system, through its emphasis on maintaining the purity of the six essential factors (atmospheric air, food, water, etc.), inherently recognizes the environmental determinants of drug safety and efficacy, and the impact of drugs on environmental health after elimination from the human body [7,36,37].

9. Pharmacological Basis of Unani Drugs

9.1 Classification of Unani Drugs by Origin

The Unani pharmacopoeia encompasses more than 2,000 documented medicinal substances, classified by their source of origin into three primary categories, herbal, animal, and mineral, reflecting the Unani system's comprehensive utilization of naturally occurring therapeutic resources. Dioscorides (40–90 AD), recognized as the founding father of IlmulAdvia (Pharmacology/Pharmacognosy) within the Unani tradition, first compiled a comprehensive illustrated pharmacopoeia in his Materia Medica, documenting approximately 600 medicinal plants [5,9,13].

Table 9: Classification of Unani Materia Medica by Source of Origin

Category	Proportion (%)	Sub-categories and Examples	Scientific Evidence
Herbal (Nabati)	**~90%**	Roots, bark, leaves, flowers, fruits, seeds, resins, gums. Examples: Terminalia chebula (Haritaki), Glycyrrhiza glabra (Asl-ul-sus), Nigella sativa (Habbatus-Sauda), Berberis aristata (Zarishk), Withaniasomnifera (Asgand)	Extensively studied; multiple clinical trials; anti-inflammatory, antimicrobial, adaptogenic, antidiabetic activities demonstrated
Animal (Haiwani)	**4–5%**	Animal products (milk, honey, urine, fat), animal organs (liver, heart, brain), invertebrates (crab, scorpion, earthworm). Organs used in organotherapy for corresponding organ diseases	Variable evidence; some compounds (e.g., honey, shellac) have established bioactivity
Mineral (Maadani)	**5–6%**	Ores, metals, precious stones, salts (e.g., Shilajit, Kohl, Sangjarrah, Firozah/Turquoise, Zaj/Ferrous sulphate, gold, silver)	Specific minerals with established pharmacology; toxicological concerns require rigorous Tadbir (processing)

Source: *References [2, 5, 7, 13, 38, 39].*

9.2 Ibn Sina's Framework for Drug Evaluation

Ibn Sina's detailed framework for pharmacological evaluation in Al-Qanoon fit-Tib represents one of history's most sophisticated early contributions to clinical pharmacology. His second book of Al-Qanoon details pharmacological characterization of 811 drugs, describing more than 60 kinds of pharmacological effects of simple drugs. He categorized drug effects as: local, general, direct, specific, indirect, counter-attracting, synergistic, antagonistic, potentiating, cumulative, and side effects, a classification that parallels and in several respects anticipates modern pharmacological taxonomy [13,14,40].The fifth book of Al-Qanoon serves as a comprehensive pharmacopoeia, detailing the composition and preparation of 508 complex drug formulations used up to the 10th century, together with descriptions of indications for 186 complex drugs, a scale of pharmacological documentation unrivaled in its era[13,14].

10. CONTEMPORARY RELEVANCE AND INTEGRATION WITH MODERN MEDICINE

10.1 Evidence Base and Scientific Validation

An expanding body of contemporary scientific literature is increasingly validating the empirical therapeutic observations documented by classical Unani physicians across more than a millennium of continuous clinical practice. Multiple systematic reviews, randomized controlled trials, and mechanistic studies have demonstrated therapeutic efficacy of Unani drugs in conditions including psoriasis, osteoarthritis, rheumatoid arthritis, vitiligo, irritable bowel syndrome, and various metabolic and dermatological disorders [41,42,43].The WHO's strategic engagement with traditional medicine, articulated in the Traditional Medicine Strategy 2014–2023, acknowledges the potential contribution of systems such as Unani to global healthcare objectives through evidence-based integration, quality assurance, and safety monitoring frameworks [24,44].

10.2 Challenges in Standardization and Quality Assurance

Despite its therapeutic potential, the Unani system faces significant challenges in achieving the standardization required for integration within evidence-based medicine frameworks. These include: variability in raw material quality; lack of standardized manufacturing processes; insufficient pharmacovigilance infrastructure; absence of large-scale, high-quality randomized controlled trials; and variable regulatory oversight across different countries [7,34,45].The CCRUM, the Pharmacopoeia Commission for Indian Medicine (PCIM&H), and AYUSH have made significant progress in developing Unani Pharmacopoeias, standardized drug monographs, and Good Manufacturing Practice (GMP) guidelines. The Traditional Knowledge Digital Library (TKDL) has documented thousands of traditional formulations in a digitally searchable format, providing intellectual property protection against biopiracy [5,18,45].

10.3 Pharmacovigilance Infrastructure for Unani Medicine

The development of a robust pharmacovigilance system specifically adapted to Unani medicine remains an urgent priority. Existing challenges include: complex multi-ingredient formulations complicating adverse event attribution; misidentification of herbs; adulteration; contamination; variability in patient reporting; and the absence of systematic spontaneous ADR reporting systems for traditional medicines in most countries [34,37,46].WHO's Collaborating Centre for International Drug Monitoring (Uppsala Monitoring Centre) and the Herbal ATC classification system represent important international steps toward establishing a standardized pharmacovigilance framework for traditional medicines including Unani. In India, the National Pharmacovigilance Program for AYUSH was launched to establish systematic ADR monitoring, though its implementation remains incomplete [37,47].

10.4 Growing Global Interest in Unani Therapeutic Modalities

Several Unani therapeutic modalities, particularly Hijama (cupping therapy), Taleeq (leech therapy), Fasd (venesection), and various herbal formulations, are attracting growing international scientific interest and are increasingly the subject of systematic clinical investigation. Cupping therapy, now practiced globally by professional athletes and sports celebrities, has stimulated substantial research interest, with multiple systematic reviews suggesting therapeutic efficacy in chronic pain, headache, and hypertension [28,29,48].

11. Current Status and Future Perspectives

11.1 Institutional Framework in India

India maintains the world's most comprehensive institutional framework for Unani medicine, with over 40 Unani medical colleges offering 5.5-year BUMS (Bachelor of Unani Medicine and Surgery) degree programmes, post-graduate MD/MS programmes in multiple specialties, and a national network of Unani hospitals and dispensaries. The CCRUM coordinates a national network of research laboratories conducting clinical, pharmacological, and basic science research on Unani formulations.[5,18,49]

11.2 Declining Adherence to Classical Principles

A critical concern identified by multiple scholars is the progressive decline in adherence to classical Unani therapeutic principles among contemporary practitioners. The usage of Munzij and Mus'hil therapy, the cornerstone of Unani pharmacotherapy for chronic diseases, is substantially diminishing in contemporary Unani practice, despite its foundational importance documented in classical literature. This deviation from traditional principles compromises therapeutic outcomes and makes it impossible to meaningfully evaluate efficacy or distinguish patient responses attributable to Unani-specific interventions[1,2,50].

11.3 Future Research Priorities

Future research priorities for the advancement of evidence-based Unani medicine include:[41,42,44,50]

- Development of validated, standardized Unani diagnostic protocols for Mizaj assessment that can be applied in clinical trial settings.
- Conduct of adequately powered, methodologically rigorous randomized controlled trials of Unani interventions in priority disease areas.
- Establishment of comprehensive pharmacovigilance systems for systematic ADR monitoring of Unani drugs.
- Pharmacognostic, phytochemical, and pharmacological characterization of under-researched Unani medicinal substances.
- Integration of traditional knowledge (TKDL) with systematic evidence generation frameworks.
- Development of mechanism-based research elucidating the molecular pharmacological basis of classical Unani therapeutic observations.
- Cross-disciplinary collaboration between Unani scholars, pharmacologists, clinical researchers, and evidence synthesis methodologists.

12. Conclusion

The Unani System of Medicine represents an extraordinary intellectual and therapeutic heritage spanning nearly three millennia of continuous development, from its Greek origins in the humoral theories of Hippocrates and Galen, through its golden age elaboration by the towering figures of Islamic medicine, to its present status as a formally recognized and actively practiced traditional medical system serving millions of patients across South and Central Asia.

The doctrinal architecture of Unani medicine built upon the seven physiological principles, the four humours, the concept of individualized temperament, and the six essential prerequisites of health, represents a holistic, patient-centred framework of remarkable conceptual sophistication, with documented

parallels to many principles now recognised as foundational in contemporary integrative, preventive, and personalized medicine.Unani medicine's hierarchical therapeutic framework prioritising dietary and regimental interventions over pharmacotherapy, and reserving surgery as a last resort, reflects a deeply rational and patient-safety-oriented approach to clinical management. The built-in pharmacovigilance mechanisms within Unani pharmacology, including temperament-matched drug selection, drug potency grading, corrective prescriptions, and systematic drug processing and purification, represent an early, coherent system of rational drug management that anticipated many principles of modern pharmacovigilance.For Unani medicine to fully realize its potential contribution to global healthcare, a sustained and systematic programme of rigorous scientific investigation, standardization, quality assurance, pharmacovigilance, and evidence-based integration is essential. Critically, contemporary Unani practitioners must return to and uphold the classical principles of practice documented in the authoritative textual heritage, without which the system's distinctive therapeutic identity and efficacy are compromised.The enduring relevance of Unani medicine to contemporary healthcare lies not merely in the potential pharmacological activity of its extensive materia medica, but in its philosophically coherent, holistic, and individualized approach to health an approach whose essential insights continue to resonate with the most advanced frontiers of modern integrative and personalized medicine.

Conflict of Interest

The authors declare no conflict of interest related to this review.

Funding

This review received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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