



Unani Perspectives on Dyslipidemia: An Integrative Review of Classical Concepts and Contemporary Relevance

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Abstract

Background: This review examines dyslipidemia from both Unani and contemporary perspectives. Dyslipidemia is one of the most prevalent pathological conditions in modern times, primarily resulting from unhealthy dietary habits and sedentary lifestyles. Due to its high atherogenic potential, it is a major contributor to systemic disorders, particularly cardiovascular diseases and cerebrovascular accidents. In Unani medicine, dyslipidemia is attributed to the predominance of *Baroodat* (coldness) in the liver and the body, which disrupts the phlegmatic balance, impairs fat metabolism, and leads to abnormal accumulation. Accordingly, therapeutic interventions that temper hepatic and systemic coldness and restore metabolic harmony may offer significant benefits.

Methods: Literature for this study was obtained from electronic databases, including PubMed, Web of Science, ScienceDirect, EMBASE, Google Scholar, ResearchGate, and Elsevier, as well as from major resource libraries containing Unani books and manuscripts relevant to the topic.

Results: Lipids and phlegm share significant similarities in origin, nature, pathophysiology, and complications. Despite differences in terminology, both systems converge common outcomes such as vascular obstruction, metabolic inefficiency, and heightened cardiovascular risk. This suggests that classical descriptions of *Balghamī* disorders may represent early interpretations of lipid dysregulation.

Conclusion: Combining biomedical and Unani perspectives provides a more integrated view of dyslipidemia. Such an approach can enhance early recognition, guide context-specific interventions, and contribute to better cardiovascular risk management.

Keywords: Dyslipidaemia, lipids, Phlegm, Phlegmatic disorders, Unani Medicine

Introduction

Dyslipidemia is a disorder of lipoprotein metabolism characterized by derangement in blood lipid levels. It may present elevated triglycerides, elevated cholesterol, a combination of both, or reduced HDL cholesterol.¹ Dyslipidemia, especially a circulating non-optimal level of cholesterol, is one of the most important risk factors for atherosclerotic cardiovascular disease (ASCVD), which accounts for the most deaths worldwide. The estimations of burden of ASCVD attributed to high LDL-C levels worldwide were based on data available in the GBD (Global Burden of Disease) database. According to the estimations of the GBD study in 2019, a total of 3.78 million deaths from IHD (ischemic heart disease) worldwide were attributable to high LDL-C levels, accounting for 44.3% of IHD deaths. While 0.61 million deaths from ischemic stroke were attributable to high LDL-C levels, accounting for 22.4% of ischemic stroke deaths. Globally, these numbers have increased since 1990.²

While dyslipidemia as a distinct pathological entity is not explicitly defined in classical Unani literature, Unani physicians have extensively discussed related concepts such as *Dusūmat-e-Dam* (greasiness or viscosity of blood), *Charbī/Sameen* (body fat), *Simān-i-Mufrīt* (obesity), and the predominance of *Balgham* (phlegm). These classical descriptions reflect a nuanced understanding of lipid metabolism, long before the advent of modern biomedical terminology.

Classical Unani texts highlight that excessive or deranged phlegm is associated with symptoms such as lethargy, obesity, poor digestion, reduced vitality, and vascular derangements, many of which closely resemble the clinical manifestations and complications observed in dyslipidemia. Furthermore, the Unani framework explains the systemic impact of phlegmatic imbalance on metabolic processes and circulation, which conceptually aligns with modern understandings of lipid disorders and their sequelae, including atherosclerosis and cardiovascular diseases.

In this article, we endeavor to explore these correlations systematically, drawing upon authoritative Unani sources and interpreting them in the context of current biomedical knowledge of dyslipidemia. By integrating classical perspectives with modern pathophysiology, this synthesis aims to provide a broader understanding of lipid disorders and open new avenues for integrative approaches to their prevention and management.

Materials and Methods

This study adopts a narrative and descriptive literature review approach. To ensure rigor and quality, systematic procedures were employed. A comprehensive search of peer-reviewed journals was conducted using keywords such as 'Unani perspective of dyslipidemia,' 'phlegm disturbances,' 'Balgham abnormalities,' 'lipid metabolism,' and 'cardiovascular risk factors.' The databases searched included Google Scholar, MEDLINE, and PubMed. Reference lists of relevant articles were also reviewed to identify additional studies. In addition, authoritative biochemistry and physiology textbooks, along with classical Unani literature, were consulted. Key Unani sources included *Al-Qānūn fī al-Ṭibb* (The Canon of Medicine), *Kulliyāt-e-Nafīsī*, *Kulliyāt-e-Qānūn*, *Kulliyāt-e-ʿAsrī*, *Kitāb fī al-Mizāj*, 'Ayn al-Ḥayāt, *Firdousul Hikmat*, *Tibb-i-Akbar*, *Zakhirah Khwārazm Shāhī* and *Kāmil al-Ṣināʾa*."

Observations

The earliest conceptual basis for dyslipidemia can be traced to Buqrat (Hippocrates), who in *Fasool-e-Buqratiya* described *Dasūmat-e-Dam* (viscosity or richness of blood), resembling the modern notion of hyperlipidemia. He observed that thickened blood, often resulting from poor diet and lifestyle, led to heaviness, sluggishness, and obesity.³ Jalinoos (Galen), in *Kitāb fī al-Mizāj*, further elaborated that the greasy component of blood (*Dasūmat-e-Dam*) gives rise to *Sameen* (less solid fat), a view later echoed by other Unani scholars⁴.

ʿAlī ibn al-ʿAbbās al-Majūsī (930–994 CE), in *Kāmil al-Ṣināʾa*, distinguished between *Charbī* (dense fat) and *Sameen* (soft, whitish fat), linking their deposition to the cold temperament of organs. He emphasized that blood lipids serve both as an energy source and a protective layer, comparable to oil fueling a lamp.⁵ Ibn Sīnā (Avicenna), in *Al-Qānūn fī al-Ṭibb*, associated fat accumulation with temperament, noting greater deposition in cold (*Balghamī*) constitutions, and classified fat into *Sameen* (fluid/semi-fluid) and *Riwāj* (solid).⁶ Other authorities, including Chaghminī in *Kanoohah*, reiterated that fat originates from the greasy component of blood.

Collectively, these classical references establish *Dasūmat-e-Dam* as the Unani equivalent of circulating lipids, underscoring their role in nourishment, energy, and structural support. Dysregulation of this component, analogous to modern dyslipidemia, was thus recognized as a key factor disrupting organ structure and function.

The theoretical framework of Unani medicine, including its diagnostic and therapeutic principles, is founded on the physiological and pathological states of the four humours: *Dam* (blood), *Balgham* (phlegm), *Safrāʾ* (yellow bile), and *Sawdāʾ* (black bile). The equilibrium of these humours is considered vital for optimal bodily function, while qualitative or quantitative imbalances in one or more are regarded as the underlying cause of disease.⁷ In Unani doctrine, nearly all pathological conditions are attributed to disturbances in a single humour or a combination thereof.

On similar grounds of humoral imbalance, dyslipidemia—currently defined as a disorder of lipid metabolism characterized by abnormal blood lipid levels—is interpreted by contemporary Unani scholars as a manifestation of disturbances in *Balgham* (phlegm). Within the Unani framework, both qualitative and quantitative derangements of this humour are considered central to the pathogenesis of dyslipidemia, thereby bridging classical concepts with modern understanding of lipid disorders.⁸

Phlegm, with its cold, moist temperament, viscosity, and nutritive role, is considered most analogous to lipids.⁹ In Unani medicine, *Sūʿ-e-Mizāj Māddī*, marked by the predominance of *Balgham*, is viewed as a parallel to modern dyslipidemia, reflecting similar traits and consequences of lipid imbalance. The correlation between lipids in modern medicine and phlegm in Unani medicine is better understood by examining their shared properties, as outlined below:

1. Physical properties: Phlegm is a dense, viscous fluid with a sticky consistency, white in appearance, and inherently cold in temperament. Upon entering the circulatory system, it transforms under the influence of the body's innate heat and the thermal energy generated during digestion. As a partially digested byproduct of food, phlegm is gradually refined into a nutritive substance, and once fully concocted, it can be converted into blood, which plays a vital role in nourishing organs and maintaining physiological functions. Similarly, the temperament of phlegm and fat is essentially the same, with both sharing a comparable appearance. Both phlegm and fat are characterized by cold and moist qualities. Like phlegm, lipids can undergo transformation under the influence of heat and contribute to the nourishment of body organs, particularly during caloric deficiency. This suggests that phlegm and fat function as latent energy reserves and act as moistening agents within the body.^{9,10}

2. Etiological Factors (*Asbāb-e-Takwīn*): In Unani medicine, the formation of phlegm is explained through three fundamental etiological factors (*Asbāb-e-Takwīn*). When these classical *Asbāb* are compared with contemporary concepts of lipid metabolism, notable parallels emerge.^{11,12}

Active Cause (*Sabab-e-Fāʾil*): This refers to a degree of bodily heat slightly below the moderate level, which supports physiological transformation but does not permit complete digestion, leading to the generation of phlegm. This is analogous to reduced enzymatic and

metabolic efficiency in individuals predisposed to lipid dysregulation, where incomplete nutrient processing results in excessive fat storage.

Instrumental Cause (*Sabab-e-Ālī*): Represented by the stomach and liver, these organs are central to the processing and transformation of ingested matter into phlegm. A direct parallel exists in modern biomedical science, where the gastrointestinal system and hepatocytes are the primary sites of fat absorption, lipoprotein synthesis, and cholesterol metabolism.

Material Cause (*Sabab-e-Māddī*): Identified as cold, moist, and viscid dietary components, particularly fats and oils, which play a central role in the generation of phlegm in Unani medicine, and analogously, they contribute to lipid synthesis and accumulation in modern biomedical understanding.

A notable observation by Zakariya Razi regarding obesity, closely associated with the predominance of phlegm and thereby linked to dyslipidemia, is that its primary precursor is foods of moist temperament (*Martoob Ghiza*), which are predominantly rich in fatty substances.¹³ This view is further supported by Ibn Rushd, who classified fat as inherently cold and moist (*Barid wa Ratb*), thereby affirming its phlegmatic nature.¹⁴

Ali Ibn Rabban Ṭabarī, in his seminal work *Firdaus al-Ḥikmah*, emphasized that excessive food consumption, when coupled with a sedentary lifestyle, is a principal cause of obesity—an observation strikingly consistent with contemporary biomedical understandings of metabolic syndrome and dyslipidemia. In Unani medicine, obesity (*Simān-i-Mufrit*) and dyslipidemia are conceptually linked through excess coldness (*Burūdat*) and moisture (*Ruṭūbat*).¹⁵

Several other factors are recognized in Unani medicine as contributing to the excessive production of phlegm in the body. These include insufficient physical activity, prolonged or excessive sleep, and certain mental illnesses, such as depression, that diminish cognitive and physical engagement.⁹ Additionally, individuals with an inherently cold temperament (*Mizāj Bārid*) are more predisposed to this imbalance. Collectively, these factors are believed to weaken innate heat (*Ḥarārat-e-Gharīziyya*), which in turn increases the tendency toward cold dominance within the body.^{7,9} As highlighted earlier, this cold predominance hampers the process of proper concoction, resulting in incomplete digestion and consequently an overproduction of phlegm. Interestingly, parallel mechanisms are recognized in contemporary medicine, where similar factors viz physical inactivity, excessive sleep, psychological disorders, and genetic predisposition, are strongly linked with lipid accumulation in the blood and the development of obesity.

3. Formation Process (*ʿAmaliyyat at-Takawwun*)

Phlegm is primarily produced in the stomach as a result of incomplete digestion and is subsequently modified in the intestines and liver. Its formation predominantly occurs during the first two stages of digestion, viz,

gastric and hepatic, with minimal transformation taking place during the vascular stage.^{11,16}

Lipid metabolism in modern physiology mirrors this process in many respects. The initial breakdown of fats begins in the stomach and intestines, where lipids are digested, absorbed, and transported. The liver then assumes a central role in lipid synthesis, conversion, and regulation, including the production of very low-density lipoproteins (VLDL).¹⁷

Thus, both phlegm in Unani medicine and lipids in modern physiology share a common origin and undergo parallel stages of transformation within the digestive system, underscoring the conceptual convergence between the two systems of medicine.

4. Site and Distribution: Phlegm is not confined to a single anatomical location. It exists in varying proportions across the stomach, intestines, vessels, and other organ cavities, dynamically distributed in response to physiological needs.¹⁸

Fats, too, are diffusely located within cell membranes, adipose tissue, and around organs, without a specific containment, but always in harmony with metabolic requirements.¹⁹ This shared distributional nature underscores their systemic involvement in body functions.

5. Physiological Role of Phlegm: Unani scholars emphasize the purposeful role of phlegm within the Unani framework under the concept of Final Cause (*Sabab-e-Kamālī*). In classical texts, phlegm is not regarded as an inert residue but as a substance endowed with inherent wisdom, playing a vital role in sustaining the body. It is described as a latent nutritive reserve, capable of being transformed into *blood* (*Dam*) when fresh dietary intake is inadequate. This mechanism ensures the continuity of vital processes and the preservation of *Ḥarārat-e-Gharīziyya*, particularly during starvation, illness, or prolonged exertion.¹¹ This description closely parallels the biomedical understanding of adipose tissue, which serves as an energy reservoir mobilized during fasting or nutritional deprivation to meet systemic metabolic demands.

6. Pathological Implications and Conceptual Integration: Classical Unani scholars described excess phlegm in the blood as a factor that increases viscosity and impairs the delivery of nourishment. This view resonates with the circulatory and metabolic consequences of modern hyperlipidemia. Ibn Rushd observed that phlegm accumulation disrupts tissue nourishment, a notion paralleling lipid-induced hypoxia and cellular dysfunction.¹⁴

In Unani pathology, abnormal Phlegm by virtue of its thickness and viscosity, produces obstructions (*Suddah*) in vessels, nerves, and tissues, much like the systemic effects of dyslipidemia, which disrupts multiple organs and metabolic processes. Both perspectives recognize impaired circulation, digestion, and organ function as central outcomes. Among the major complications are cerebrovascular disorders, where excess lipids or Phlegm obstruct cerebral arteries, predisposing to

transient ischemic attacks and strokes^{20,21}—described in Unani terms as *Balghamī* blockages hindering *Nafūz al-Rūh*. Dyslipidemia's role in Non-Alcoholic Fatty Liver Disease (NAFLD/MASH) also parallels the Unani concept of a cold and moist hepatic dystemperament (*Sū'e-Mizāj Bārid wa Raṭb*), which weakens digestion and promotes accumulation of *Balgham-e-Ghaleez*. Similarly, Peripheral Artery Disease (PAD), resulting from lipid deposition and ischemia, corresponds to *Insidād al-'Urūq* in Unani medicine, where a phlegmatic dystemperament reduces innate heat and impairs the expulsive faculty (*Quwwat-e-Dāfi'a*).^{22,23}

All these observations collectively underscore the strong conceptual relationship between phlegm and lipids. Within the Unani framework, dyslipidemia may be interpreted as a disturbance in the quality or quantity of phlegm. It is important to note, however, that phlegm and lipids are not synonymous; rather, lipids may be considered one of the significant constituents or physiological manifestations of phlegm. This nuanced perspective facilitates an integrative understanding that preserves the authenticity of classical humoral theory while aligning with modern biomedical concepts.

7. Evaluation of Lipid/Phlegm Disorders

In contemporary medicine, dyslipidemia is defined as a biochemical disturbance of lipid metabolism, characterized by elevated levels of total cholesterol, low-density lipoprotein (LDL), or triglycerides, and/or reduced high-density lipoprotein (HDL). It is typically asymptomatic, remaining clinically silent until complications such as atherosclerosis, cardiovascular disease, or stroke develop. Consequently, modern biomedical texts do not describe specific symptoms directly attributable to dyslipidemia. Although optimal lipid levels can vary depending on age, sex, and individual risk factors, general reference ranges are: LDL cholesterol < 100 mg/dL, HDL cholesterol > 40 mg/dL in men and > 50 mg/dL in women, triglycerides < 150 mg/dL, and total cholesterol < 200 mg/dL.²⁴

To address the growing burden of lipid disorders, two major professional bodies in India—the Cardiological Society of India (CSI) and the Lipid Association of India (LAI)—have recently published evidence-based clinical practice guidelines and consensus statements for the diagnosis and management of dyslipidemia (Table 1).²⁵

Table 1: Standard lipid testing panels and targets for various risk groups according to CSI

Lipid parameter	Desirable levels (mg/dL)				
	Low risk	Moderate risk	High risk	Very high risk	Extremely high risk
LDL-cholesterol	<100	<100	<70	<55	<40
Non-HDL cholesterol	<130	<130	<100	<85	<70
HDL cholesterol	>40 M >50 F	>40 M >50 F	>40 M >50 F	>40 M >50 F	>40 M >50 F
Triglycerides	<150	<150	<150	<150	<150

Low risk – No known risk factor of cardiovascular disease. *Moderate risk* – Any one risk factor, for example, smoking/hypertension/diabetes mellitus etc. *High risk* – Two or more risk factors without any disease manifestation, chronic kidney disease, long-standing diabetes mellitus existing for more than 10 years, history of heterozygous familial hypercholesterolemia. *Very high risk* – clinical evidence of coronary artery disease, long-standing diabetes mellitus existing for more than 20 years, etc. *Extremely high risk* – recurrent vascular events.

In Unani medicine, phlegm predominance provides a framework for interpreting dyslipidemia, as classical descriptions of phlegmatic imbalance parallel the metabolic and systemic features observed in modern presentations.

Based on classical descriptions, the postulated clinical manifestations of dyslipidemia from an Unani viewpoint are summarized in Table 2.

Table 2: Clinical Manifestations of Balgham (Phlegm) Dominance and Their Potential Association with Dyslipidemia

Clinical Feature	Unani Explanation	Possible Relation to Dyslipidaemia	Ref
Generalized flabbiness of body ^{8,11}	Due to excessive moisture and weak <i>Quwā Musakkina</i> (consolidative force), leading to poor tissue cohesion.	Visceral adiposity, muscle wasting with fat deposition (sarcopenic obesity), seen in metabolic syndrome	40
Cold, soft, moist skin ⁸	Indicative of <i>Barid wa Ratb Mizāj</i> ; sluggish metabolism	Poor peripheral perfusion, low metabolic rate, associated with hypothyroidism and dyslipidaemia	41
Whitish or pale urine (Bawl-e-Abyaz) ⁸	Phlegm being excreted; sign of excess moisture	Dyslipidemia effects the urine composition	42
Excessive sleep and lethargy ^{8,11}	Heavy phlegm blunts <i>Rūḥ</i> and energy	Hypersomnia, chronic fatigue due to low metabolic activity, insulin resistance, or sleep apnea	43
Nerve weakness (Za'f al-A'sāb) ⁸	Moisture impairs vital pneuma transmission	Peripheral neuropathy is a common complication of metabolic syndrome and dyslipidaemia	44
Mental dullness ¹¹	Excess phlegm in brain dampens clarity	Linked to cognitive decline and Alzheimer's disease in patients with hyperlipidaemia	45,46
Breathlessness on exertion (<i>Dīq al-Nafs</i>) ⁴⁷	Fat around diaphragm and lungs limits expansion	Obesity-related dyspnea, obstructive sleep apnea, and cardiopulmonary compromise	48,49
Diminished libido (<i>Fatūr al-Shahwah</i>) ⁴⁷	Excess moisture reduces <i>Harārat</i> in organs	Dyslipidaemia is linked to erectile dysfunction and hormonal imbalances	50
Fatigue and reduced endurance ⁴⁷	Inadequate tissue nourishment and sluggish humor movement	Chronic fatigue associated with mitochondrial dysfunction and reduced oxygen utilization	51

Although classical Unani texts do not outline explicit protocols for dyslipidemia screening, they describe diagnostic indicators associated with cold temperament (*Sū-i-Mizāj Bārid*) and phlegm *predominance that may serve as early clinical markers. Phenotypic and functional features can be interpreted as surrogate screening criteria. For instance, a small and slow cardiac pulse (Nabdh Sagheer Bāti)*⁷, white and viscous urine⁷, indicative of impaired metabolism and phlegmatic dominance, and sticky, poorly formed stools are all noted manifestations of phlegmatic imbalances. A systematic evaluation of such Unani observations could yield meaningful, clinically relevant markers for the early detection of dyslipidemia and associated metabolic dysfunctions. Integrating these insights into modern risk assessment frameworks may open new avenues for prevention and timely intervention.

8. Principles of Treatment (*Uṣūl-i-Ilāj*) as per Unani Classics

The management of dyslipidemia in Unani medicine is guided by foundational principles aimed at restoring humoral balance, correcting morbid temperaments, and eliminating excess or morbid substances. Treatment strategies focus on harmonizing the body's internal milieu through dietary regulation, lifestyle modification,

and targeted therapeutic interventions, addressing both the underlying causes and systemic manifestations of phlegm and fat (*Shahm*). The following principles, derived from classical Unani texts, outline a comprehensive framework for achieving this balance:

Dietary Regimen (*Ghizai Tadbeer*): Avoid *ghiza-i-ghaleez* such as heavy, oily, and fried foods. *Taqlīl-i-Ghidhā'* (reduction in dietary intake) should be practiced, as caloric restriction helps manage both fat and phlegm. Ibn Hubal Baghdadi emphasized the gradual restriction of fatty and oily foods in cases of obesity-related dyslipidemia to maintain the body's internal equilibrium. Additionally, hot water and certain spices, including *Zīra Siyāh* (*Carum carvi* L.), *Rāi* (*Brassica nigra* L.), and *Lehsun* (*Allium sativum* L.), may be used to aid digestion and support lipid metabolism.³⁸

Avoidance of Excessive Sleep (*Ijtināb-e-Kasrat-i-Nawm*): Adequate sleep without prolongation helps prevent accumulation of *ruṭūbat* and supports metabolic balance; over-sleeping is believed to promote sluggish metabolism and humoral imbalance.²¹

Temperament Modulation (*Ta'dīl-i-Sū-i-Mizāj*): Restoration of normal temperament (*mizāj*), specifically correction of *Sū-i-Mizāj-i-Jigar Bārid Sāda wa Māddī*, the

simple cold dyspepsia of the liver, with or without associated morbid matter.¹²

Dilution of Thick Humours/Morbid Substances (*Tarqīq-i-Akhlat/Mawād*): Thinning viscous humours enhances circulation and metabolic activity.²¹

Induction of Dryness (*Tajfīf*): Counteracts excess moisture (*ruṭūbat*), particularly in phlegmatic and obese individuals.²¹

Diaphoresis (*Ta'arīq*): Inducing sweating facilitates the elimination of excess *ruṭūbat* and morbid substances.²¹

Topical Oiling (*Tadhīn*): Application of resolvent (*muḥallil*) oils promotes local dissolution of *mādda* (morbid matter).²¹

Elimination of Morbid Matter (*Tanqīya*): In *Sū'i-i-Mizāj-i-Jigar Bārid Māddi*, excess *mādda* is removed using concoctive (*munḍij*) and purgative (*mushil*) therapies.³⁹

Deobstruent Drugs (*Mufattiḥ-i-Sudad*): These may be employed in cases of *Sudad al-Kabid* (obstructive liver disorders) to relieve hepatic congestion and facilitate normal liver function.²¹

Pharmacological management

Pharmacological agents used in Unani Medicine for the management of dyslipidemia are comprehensively summarized in Tables 3 and 4, highlighting their therapeutic classes, mechanisms of action, and lipid-modulating effects.

Table 3: Reported Hypolipidemic Effects of Single Unani Drugs

Unani Drug	Botanical Name	Mechanism of Action	Primary Lipid Effect	Ref
Asaroon	<i>Asarum europaeum</i>	Acts as a stimulant and carminative; enhances digestion and metabolism.	↓ LDL-C, ↓ TG	8
Anisoon	<i>Pimpinella anisum</i>	Possesses carminative and digestive properties; aids in lipid metabolism.	↓ LDL-C, ↓ TG	8
Filfil Siyah	<i>Piper nigrum</i>	Contains piperine; enhances bioavailability of other compounds; stimulates digestion.	Modest reduction in lipid levels	8
Ajwain	<i>Trachyspermum ammi</i>	Contains thymol; possesses digestive and carminative properties; aids in lipid metabolism.	↓ LDL-C	40
Kalonji	<i>Nigella sativa</i>	Contains thymoquinone; exhibits anti-inflammatory and antioxidant properties; supports lipid metabolism.	↓ LDL-C, ↑ HDL-C	41

Table 4: Reported Hypolipidemic Effects of Compound Unani Formulations

Unani Drug	Botanical Name	Mechanism of Action	Primary Lipid Effect	Ref
Majoon-e-Seer Alvi Khan	<i>Allium sativum</i> (Garlic)	Contains allicin; exhibits antioxidant and anti-inflammatory properties; supports lipid metabolism.	↓ Total cholesterol, ↓ LDL-C, ↑ HDL-C	42
Garlitab	Polyherbal formulation	Combination of various herbs; synergistic effect A combination lipid metabolism.	↓ Total cholesterol, ↓ LDL-C, ↓ TG	43
Jawarish Bisbasa	Unani formulation	Combination of herbs; aids in digestion and metabolism; supports lipid balance.	↓ Total cholesterol, ↓ LDL-C, ↓ TG	44
Itrifal-e-Sagheer	<i>Cinnamomum zeylanicum</i> (Cinnamon), <i>Zingiber officinale</i> (Ginger), <i>Cuminum cyminum</i> (Cumin)	Contains bioactive compounds; enhances digestion and metabolism.	↓ LDL-C, ↓ TG	45
Safoof-e-Muhazzil	Polyherbal formulation	Combination of herbs; promotes digestion and metabolism.	↓ Total cholesterol, ↓ LDL-C, ↓ TG	8

Discussion and Conclusion

The comparative analysis of biomedical and Unani perspectives reveals significant points of convergence despite their distinct epistemological frameworks. In biomedicine, dyslipidemia is primarily understood as a

disturbance of lipid metabolism, whereas in Unani medicine it is interpreted as a manifestation of humoral imbalance, particularly the predominance of phlegm. Considered together, these approaches appear complementary: modern medicine emphasizes biochemical markers and measurable risk factors, while

Unani medicine situates the disorder within systemic and constitutional contexts. Both systems, however, converge on analogous pathological outcomes, including vascular obstruction, sluggish metabolism, and heightened cardiovascular risk. This suggests that *Balghami* disorders described in classical Unani texts may represent traditional correlates of lipid dysregulation, thereby offering a conceptual bridge between classical theory and contemporary biomedical science.

Classical Unani diagnostic markers of phlegmatic dominance, such as pulse characteristics, temperament analysis, and systemic manifestations, could be systematically explored as potential early clinical indicators of dyslipidemia. Such integrative work would not only validate Unani diagnostic methods but also enrich preventive strategies by integrating constitutional assessment with biochemical screening.

In conclusion, examining dyslipidemia through both biomedical and Unani lenses provides a richer, more holistic understanding of its pathogenesis and clinical expression. The integration of traditional theoretical frameworks with modern evidence-based approaches holds promise for enhancing early detection, fostering holistic interventions, and contributing to comprehensive strategies for cardiovascular risk reduction.

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References:

- Shlomo Melmed, Robert Hardin Williams, Allison B. Goldfine, Ronald Koenig; Williams Textbook of Endocrinology. 12th ed. Elsevier; 2011.
- INSTITUTE FOR HEALTH METRICS AND EVALUATION. Global Burden of Disease 2021. UNIVERSITY OF WASHINGTON.
- Hippocrates, Translated by Hunayn ibn Ishāq. Al-Fuṣūl al-Ibuqrāṭiyya Fī al-Uṣūl al-Ṭibbiyya [The Aphorisms of Hippocrates]. (John Tytler, ed.). Calcutta: Education Press; 1832.
- Jalinoos, Translated by Hakeem Syed Zillur Rehman. Kitab Fil Mizaj. International Printing Press; 2008.
- Hakeem Muhammad Akbar Arzani, Translated by: Hakeem Ghulam Hussain Kintoori. Kamilus Sana. Vol 1. Idarah Kitabu Shifa; 2010.
- Ibn Sina. Al Qanoon Fit Tib. Vol 1. Idarah Kitabu Shifa
- Ibn Sina, urdu translated by Allama Kabeerudin. Kulliyat-e-Qanoon. Aijaz publication house; 2006.
- Urooj S, Jahangir U, Maaz M, Azam R. Dyslipidemia from Unani prospective and its management with Safoof e Muhazzil: An update. Phytomedicine Plus. 2021;1(4):100103. <https://doi.org/10.1016/j.phyplu.2021.100103>
- Alamah Burhanuddin Nafees translated by Hakeem Kabiruddin. Kulliyat-i-Nafeesi. Vol 1.; 1934.
- Kousar Chandpori. Muajazul Qanoon. CCRUM; 1998.
- Abu Sahl Ibn Esa Ibn Yahya Ibn Ibrahim Al Maseehi. Kitabul Mu'atah Fit Tib. Vol 1. 1st ed. CCRUM; 2008.
- Sharfu al-din Ismail Jurjani. Zakirah Khwarzam Shahi. Vol 2. Idarah Kitab ul-Shifa; 2010.
- Abu Bakr Muhammad Ibn Zakarya Razi. Kitab Ul-Hawi. CCRUM; 2008.
- Abul Waleed Ibn Rushd. Kitabul Kulliyat. Vol 1. CCRUM; 1987.
- Abu ul Hassan Ali ibn Sahl Raban Tabri. Firdous Ul-Hikmat. Idarah Kitabu Shifa; 2010.
- Avicenna(Abu Ali al-Husayn ibn Abd Allah ibn sina), Adapted by Laleh Bakhtiar, Translated by:O.Cameron Gruner and Mazar H. Shah. The Canon of Medicine. Vol 1. 22nd ed.; 1999.
- Gupta A. Digestion and Absorption of Lipids. In: Comprehensive Biochemistry for Dentistry. Springer Singapore; 2019:441-450. https://doi.org/10.1007/978-981-13-1035-5_16
- Sharfuddin Ismail Jurjani. Zakheera Kharzam Shahi. Vol 5. Idarah Kitabu Shifa; 2010.
- Coelho M, Oliveira T, Fernandes R. State of the art paper Biochemistry of adipose tissue: an endocrine organ. Archives of Medical Science. 2013;2:191-200. <https://doi.org/10.5114/aoms.2013.33181> PMID:23671428 PMCID:PMC3648822
- Tahseen Z, Sofi G, Bin Heyat MB, Jahan N, Rashid A. Exploring Obstruction and Deobstruent Drugs in Unani Medicine: A Comprehensive Survey and Future Directions. Altern Ther Health Med. 2024;30(7):20-27.
- Hakeem Muhammad Azam Khan. Akseer I-Azam. Idarah Kitabu Shifa; 2011.
- Basaranoglu M, Neuschwander-Tetri BA. Nonalcoholic Fatty Liver Disease: Clinical Features and Pathogenesis. Gastroenterol Hepatol (N Y). 2006;2(4):282-291.
- Hamburg NM, Creager MA. Pathophysiology of Intermittent Claudication in Peripheral Artery Disease. Circulation Journal. 2017;81(3):281-289. <https://doi.org/10.1253/circj.CJ-16-1286> PMID:28123169
- Taddei C, Zhou B, Bixby H, et al. Repositioning of the global epicentre of non-optimal cholesterol. Nature. 2020;582(7810):73-77. <https://doi.org/10.1038/s41586-020-2338-1> PMID:32494083 PMCID:PMC7332422
- Sawhney JPS, Ramakrishnan S, Madan K, et al. CSI clinical practice guidelines for dyslipidemia management: Executive summary. Indian Heart J. 2024;76:S6-S19. <https://doi.org/10.1016/j.ihj.2023.11.271> PMID:38052658 PMCID:PMC11019331
- Wei S, Nguyen TT, Zhang Y, Ryu D, Gariani K. Sarcopenic obesity: epidemiology, pathophysiology, cardiovascular disease, mortality, and management. Front Endocrinol (Lausanne). 2023;14. <https://doi.org/10.3389/fendo.2023.1185221> PMID:37455897 PMCID:PMC10344359
- Gao M jiao, Xue H zhong, Cai R, et al. A Preliminary Study on Infrared Thermograph of Metabolic Syndrome. Front Endocrinol (Lausanne). 2022;13. <https://doi.org/10.3389/fendo.2022.851369> PMID:35498430 PMCID:PMC9042650

28. Cai C, Mai Z, Deng T, et al. Impact of dyslipidemia on 24-h urine composition in adults without urolithiasis. *Lipids Health Dis.* 2018;17(1):250. <https://doi.org/10.1186/s12944-018-0899-x> PMID:30400932 PMCID:PMC6220564
29. Wang D, Chen J, Zhou Y, et al. Association between sleep duration, sleep quality and hyperlipidemia in middle-aged and older Chinese: The Dongfeng-Tongji Cohort Study. *Eur J Prev Cardiol.* 2019;26(12):1288-1297. <https://doi.org/10.1177/2047487319843068> PMID:30966819
30. Smith AG, Singleton JR. Obesity and hyperlipidemia are risk factors for early diabetic neuropathy. *J Diabetes Complications.* 2013;27(5):436-442. <https://doi.org/10.1016/j.jdiacomp.2013.04.003> PMID:23731827 PMCID:PMC3766404
31. Zhao Y, Zhang H, Cheng J, Zou Y, Zhang D, Duan X. Association between Dyslipidaemia and Cognitive Impairment: A Meta-Analysis of Cohort and Case-Control Studies. *J Integr Neurosci.* 2024;23(2). <https://doi.org/10.31083/j.jin2302040> PMID:38419448
32. Wang Q, Zang F, He C, Zhang Z, Xie C. Dyslipidemia induced large-scale network connectivity abnormality facilitates cognitive decline in the Alzheimer's disease. *J Transl Med.* 2022;20(1):567. <https://doi.org/10.1186/s12967-022-03786-w> PMID:36474263 PMCID:PMC9724298
33. Dolatshahi P, Moeini R, Mokabberinejad R, Ahmad Dar F, Alizadeh M, Mojahedi M. A Review of Cold-Wet Mizaj and Phlegm Dominance Indices in Persian Medicine. *Shiraz E Med J.* 2024;25(8). <https://doi.org/10.5812/semj-138252>
34. Jean-Louis G, Zizi F, Clark LT, Brown CD, McFarlane SI. Obstructive Sleep Apnea and Cardiovascular Disease: Role of the Metabolic Syndrome and Its Components. *Journal of Clinical Sleep Medicine.* 2008;04(03):261-272. <https://doi.org/10.5664/jcsm.27191> PMID:18595441 PMCID:PMC2546461
35. Markelić I, Hlapčić I, Rogić D, et al. Lipid profile and atherogenic indices in patients with stable chronic obstructive pulmonary disease. *Nutrition, Metabolism and Cardiovascular Diseases.* 2021;31(1):153-161. <https://doi.org/10.1016/j.numecd.2020.07.039> PMID:32981798
36. G.E. Vrentzos, K.I. Paraskevas, D.P. Mikhailidis. Dyslipidemia as a Risk Factor for Erectile Dysfunction. *Curr Med Chem.* 2007;14(16):1765-1770. <https://doi.org/10.2174/092986707781058931> PMID:17627514
37. Li A, Zheng N, Ding X. Mitochondrial abnormalities: a hub in metabolic syndrome-related cardiac dysfunction caused by oxidative stress. *Heart Fail Rev.* 2022;27(4):1387-1394. <https://doi.org/10.1007/s10741-021-10109-6> PMID:33950478 PMCID:PMC9197868
38. Muhzab al-Din Ibn Hanbal Baghdadi. *Kitab Mukhtaraat Fit Tib.* Vol 1. CCRUM; 2004.
39. Hakeem Ali bin Husain Arzani, Hussain M. H. translator. *Tibbe Akbar.* Faisal Publications
40. Murad S, Saif S, Ghaffar A, Khalid N, Sheikh RA, Sheikh DM. *HERBS: Novel Considerations in Unani Medicine.* Austin Journal of Allergy. 2019;6(1):10346.
41. Abdur Rasheed, M. A. Siddiqui, Javed A. Khan. Therapeutic evaluation of Kalonji (*Nigella sativa*) in dyslipidemia - A randomized control trial. *Medical Journal of Islamic World Academy of Sciences.* 2014;22(3):111-116. <https://doi.org/10.12816/0008181>
42. Quamri MA, Wahab A, Alam MA, Ali BF. Efficacy of Majoon-e-Seer Alvi Khan in dyslipidemia: a single blind randomized standard controlled clinical trial. *Drug Metab Pers Ther.* 2021;36(4):271-279. <https://doi.org/10.1515/dmpt-2021-0117> PMID:34821127
43. Alam K, Sheikh H, Samad MdA. Clinical Effect of Poly Herbal Unani Formulation on Dyslipidemia- A Randomized Trial. *Turkish Journal of Agriculture - Food Science and Technology.* 2023;11(10):1892-1904. <https://doi.org/10.24925/turjaf.v11i10.1892-1904.6185>
44. Nirmala Devi MK, Adil MA, Nikhat Shaikh, et al. The Effects of Unani Formulation Jawarish Bisbasa in Dyslipidaemia and Anthropometric Parameters Associated with Central Obesity- An open-label clinical Trial. *Indian J Public Health Res Dev.* 2024;15(4):346-353. <https://doi.org/10.37506/wdzz3567>
45. Sazid Alam, MD Anzar Alam, Ghulamuddin Sofi, Mohd. Qudratullah Khan, Shabnam Ansari. A Randomized single blind controlled clinical trial on safety and efficacy of a Unani formulation (Itrifal-e-Sagheer) in dyslipidemia. *CELLMED.* 2020;10(1):8-10.