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Review Article

Su'al-Qinya: Unani Perspective on Iron Deficiency Anemia, its Pathogenesis, and Therapeutic Interventions

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Abstract

Anemia, a pervasive global health concern, affects millions worldwide. This study aims to provide an in-depth examination of anemia from the perspective of Unani medicine, exploring its etiology, pathogenesis, and treatment modalities. A comprehensive review of classical Unani texts and contemporary research reveals that anemia is attributed to alterations in blood composition, impaired liver function, and nutrient deficiencies. Unani practitioners employ a holistic approach, incorporating regimetal therapy, herbal remedies, and lifestyle modifications to address the underlying causes of anemia. This study highlights the significance of integrating Unani principles into modern healthcare practices, providing a complementary approach to addressing anemia and promoting overall well-being. This study aims to explore the Unani perspective on anemia, examining its etiology, pathogenesis, and treatment modalities, and highlighting the potential benefits of integrating Unani principles into modern healthcare practices. This study demonstrates the relevance of Unani medicine in understanding and addressing anemia, emphasizing the importance of a holistic approach to healthcare. By integrating Unani principles into modern healthcare practices, healthcare providers can offer a more comprehensive and patient-centred approach to managing anemia and promoting overall well-being.

Keywords: *Su'al-Qinya*, Faqru-dam, Qillatu-dam, Anemia, Unani medicine, Iron deficiency anemia.

Introduction

The term "anemia" (derived from the ancient Greek ἀναιμία, *anaimia*, meaning "lack of blood") refers to a group of conditions caused by erythropoietin tissues' inability to maintain a normal haemoglobin concentration due to an inadequate supply of one or more nutrients, which lowers the total amount of circulating haemoglobin. Iron and vitamins, such as folic acid, vitamin C, vitamin E, and vitamin B12, are necessary for the production and proper development of red blood cells.¹ The World Health Organization defines anemia as "a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs." It's the most prevalent illness in the world and one of the conditions that general practitioners see the most often. Anemia is typically a symptom of an acquired or hereditary condition rather than an isolated illness. The World Health Organization states that haemoglobin (Hb) levels below 13.0 gm/dl in adult males, 12.0 gm/dl in adult non-pregnant women,

and 11.0 gm/dl in pregnant women should be regarded as indicators of anemia.²

Anemia can be classified on the basis of specific causes. And it can be defect in red blood cell production may result from deficiencies in iron, vitamin B12, or folate. On the other hand, excessive destruction of red blood cells can arise from chronic conditions with nutritional, infectious, metabolic, or genetic origins. Among these, iron deficiency anemia (IDA) is the most common type.²

Iron deficiency is identified by abnormal levels of serum ferritin, transferrin saturation, and/or erythrocyte protoporphyrin. Iron is stored as ferritin and transported by transferrin, which delivers it to cells via transferrin receptors (CD71) for incorporation into haemoglobin in the bone marrow. Unbound iron is toxic, so it must remain bound to transferrin. Transferrin levels increase during iron deficiency.³

In Unani medicine, anemia is referred to as *Su'al-Qinya* which means "lack of vital treasure—blood" in Arabic. It

is a disorder that affects the blood's capacity to carry out physiological processes by causing both qualitative and quantitative fluctuations. It is also known as Faqr-dam, Qillatu-dam, or Fasadu-dam and the term "faqr'al dam" (anemia) is commonly used. Unani scholars, Ibn Sina (980-1037 AD), Ismail Jurjani (1041-1136 AD), Ibn Hubal Baghdadi (1117-1213 AD), and Hakim Azam Khan (1813-1902 AD) saw blood as a vital fluid produced in the liver. Nuqstaghzia occurs when the liver's functions and faculties are impaired or owing to related disorders, resulting in abnormal blood production and anemia. And Hakeem Mohammad Kabiruddin (1894-1976 AD) also mention in his book that it is an alteration in blood composition, a decrease in Kuriyat-e-Dam (red particles, or RBCs), and a fall in blood volume, all of which result in compromised oxygen supply.^{4,5,6,7}

Stages of IDA (Iron Deficiency Anemia):

First Stage: Iron Depletion

Reduced serum ferritin and iron stores in the marrow and liver occur due to insufficient iron absorption. Despite this, haemoglobin, serum iron, and erythropoiesis remain normal, and symptoms are absent.³

Second Stage: Latent Iron Deficiency

Substantially depleted iron stores begin to affect haemoglobin production, although levels remain normal. Markers include decreased serum ferritin, serum iron, and transferrin saturation (<15%), with increased total iron-binding capacity (TIBC) and free erythrocyte protoporphyrin.³

Final Stage: IDA

Microcytic, hypochromic anemia develops as haemoglobin-deficient cells replace normal erythrocytes. Symptoms include low haemoglobin, decreased serum iron, increased TIBC, and reduced transferrin saturation. Haemoglobin levels fall below normal thresholds for age and sex.³

Causes:

1. Temperamental Imbalance (Su-e-Mizaj):

Dysregulation of digestive processes and temperament can impede nutrient absorption, thereby contributing to iron deficiency anemia.

2. Excessive Metabolism (Kasrat-e-Hazm): Conditions characterised by accelerated metabolism can deplete iron stores, exacerbating iron deficiency anemia.

3. Excessive Blood Loss (Kasrat-e-Istehlak-e-Dam):

Prolonged or excessive blood loss due to various factors, including menstruation, trauma, or disease, can lead to iron deficiency anemia.

4. Impaired Nutrient Assimilation (Ihtibas-e-Mawad): Inefficient nutrient absorption and utilization can contribute to iron deficiency anemia.

5. Blood Impurities (Fasad-e-Khoon): The presence of toxins or impurities in the blood can disrupt normal hematopoiesis, contributing to iron deficiency anemia.

6. Gastric Weakness (Zof-e-Meda): Impaired gastric function can compromise nutrient digestion and absorption, leading to iron deficiency anemia.

7. Loss of Vital Fluids (Usool-e-Raeq): Excessive loss of vital fluids through sweating, diarrhea, or bleeding can result in the depletion of essential nutrients, including iron.

8. Inadequate Nutrition (Ghiza-e-Naqis): A diet lacking essential nutrients, particularly iron, can precipitate iron deficiency anemia.^{7,8,9,10}

In Unani medicine, the term *Faqr al-Dam* is closely associated with anemia. Numerous symptoms of anemia are described in classical Unani texts, including *Su al-Qinya* (abnormal blood), *Qilla-i-Dam* (reduced blood), and *Kami Khun* (low blood levels), which are attributed to *Su-e-Mizaj* (abnormal temperament).

Unani scholars have provided various explanations for the development of *Faqr al-Dam*. Some attribute it to *Duf-al-Jigar* (liver weakness). Rabban Tabari noted that *Su Mizaj Barid wa Ratb* (cold and moist abnormal temperament) could lead to symptoms of anemia. Jurjani, in his classical work *Zakheera Kharzam Shahi*, linked anemia to imbalances in dietary habits. Avicenna, in his treatise *Al-Qanoon*, suggested that excess *Sawda* (black bile) contributes to the condition, while Al-Majoosi, in *Kamil us Sana*, attributed anemia to the liver's inability to perform hemopoiesis due to *Su Mizaj*.^{7,8,9}

Azam Khan further elaborated that alteration in the blood caused by liver dysfunction lead to *Su al-Qinya*. He identified various causes of anemia, including liver diseases (*Amrad-i-Kabid*), gastrointestinal disorders (*Amrad-i-Mi'da wa Am'a*), renal conditions (*Amrad-i-Kulya*), acute and infectious illnesses (*Haad/Ufunati Amradi*), and genital system disorders (*Amrad-i-A'da-i-Tanasuliyya*).¹⁰

Pathophysiology of Anemia:

In Unani medicine, anemia (*Sū'al-Qinya*) arises from either a change in the body's temperament (*Mijaz*) or an abnormal humoral imbalance.^{7,11} Proper blood production depends on the vitality and functionality of key organs involved in digestion and elimination, such as the liver, stomach, kidneys, and spleen. Disruption in liver function, often due to altered temperament, impacts the production, quality, and quantity of humors.¹² It is also impairs the immunity and the body's innate healing power (*Ṭabī'at Mudabbira'-i-Badan*).⁷

Unani medicine classifies diseases as *Amrād Mufrada* (simple diseases) or *Amrād Murakkaba* (complex diseases). Simple diseases include *Sū'-i-Mizāj* (temperamental disorders, especially cold and wet liver temperament), structural derangements (*Sū'tarkeeb*), and connectivity disorders (*Tafarruq Ittesāl*) in organs like the stomach, kidneys, and gallbladder. Complex diseases involve combinations of these conditions.

Sū'-i-Mizāj is further divided into *Sādā* (pure temperamental alteration) and *Māddī* (humoral imbalance).^{11,13} The liver, naturally hot and moist, metabolizes food into blood, making it central to

nourishment.^{14,15} Any disruption in its temperament affects blood quality and quantity, resulting in *Sū'al-Qinya*. Some scholars link this to liver weakness (*Du'f al-Kabid*), while others attribute it to temperamental disturbances.¹⁶

Kabiruddin (1950) described *Khizra* (chlorosis), a form of *Sū'al-Qinya* in women, as involving altered blood composition. He noted microcytosis (small RBCs), hypochromia (reduced red pigment), and increased fibrous material in the blood.¹⁷

Clinical and Diagnostic Manifestations (*Istedlal wa Alámát*) of Anemia in Unani Medicine:

- Pale and white discolouration of the skin.¹⁸
- Dyspnea.¹⁸
- Puffiness of face and eyelids especially on the extremities. Sometimes it may be on the whole body Pitting edema on the feet.^{5,10}
- Brittle nails.⁴
- Irritability.¹⁸
- Prominent peripheral veins.
- Cold extremities.
- Indigestion.
- Loss of appetite, or sometimes increased appetite.¹⁸
- Feeling of air with fullness in the stomach.
- Alternate diarrhoea and constipation.⁵
- Heaviness and fatigue.¹⁸
- Sleep disturbances.
- Vertigo and giddiness.
- Spasms and tremors.
- Oliguria (reduced urine output, as noted by Sheikh).
- Excessive sweating.
- Delayed healing of wounds or ulcers.
- Gum itching and wounds.¹¹
- Stomatitis (inflammation of the mouth).
- Palpitations.¹⁸
- Occasional syncope (fainting).
- Splenomegaly (enlarged spleen).¹⁹
- Hepatomegaly (enlarged liver).
- Jaundice and ascites.¹⁵

Diagnosis (*Tashkhees*) in Unani Medicine:

Unani physicians employ traditional diagnostic techniques to identify anemia, including:

Comprehensive Patient History: A thorough inquiry into the patient's diet, menstrual patterns, lifestyle, and digestive issues provides valuable insights into the underlying causes of anemia.⁴

Pulse Examination (*Naabz*): An irregular, weak, and slow pulse indicates anemia.^{4,7}

Visual Inspection: Observation of the skin, eyes, and nails reveals characteristic signs, such as pallor (*Zard rang*) of the skin and eyes.^{4,9}

Usool-e-Ilaj (Principles of Treatment):

- Avoid foods that disrupt the liver's temperament (*Jigar*), leading to *Baroodat* (coldness) and reduced *Hararate Ghareeziya* (innate heat) of the liver.
- Refrain from consuming *Ratab* (moist), *Ghaleez* (heavy), and *Dushwar Hazm* (hard-to-digest) foods.
- Avoid drinking freezing or cold water.
- Perform daily *Riyazat* (exercise) on an empty stomach.
- Take baths using water infused with *Gandhak* (sulfur), *Suhaga* (borax), and *Shib* (alum).
- Use *Dalk* (massage) with a rough cloth and *Garam Roghan* (warm oil).
- Avoid bathing (*Hammam*) or engaging in sexual activity (*Jimah*) immediately after meals.
- Engage in *Harkat fil Raml* (rolling over warm sand or soil).
- Employ mild *istefragh* (evacuation) using *Ayarij* (*Aloe barbadensis*) and *Habbul Neel*, which help eliminate *Ghaleez* (thick), *Lezdar* (sticky), and *Balghami Fuzla* (vitiated phlegmatic fluids) from the body.^{4,5,20}

Prevention (*Tahaffuzi Tadabeer*):

Unani medicine emphasises the impact of environmental factors on health, advocating for a balanced ecosystem along with clean water, air, and food. It highlights the importance of adhering to *Asbab Sitta Zaruriyya* (six essential factors) as fundamental for maintaining and preserving health.¹⁴

Soo-ul-Qiniya Management:

1. Ilaj-bil-Ghiza (Dietary Therapy):

Nutritional Interventions for Iron Deficiency Anemia

A well-structured diet plays a vital role in managing iron deficiency anemia. The following foods, rich in iron, essential minerals, and vitamins, are highly recommended:

1. Fruits: Dates, figs, and pomegranates are excellent sources of iron and other essential nutrients.
2. Nuts and Seeds: Almonds and sesame seeds are rich in iron and can be incorporated into the diet.
3. Herbal Infusions: Ash of date seeds and fennel water can be consumed as herbal infusions to support iron absorption.
4. Protein-rich foods: Red meat, chicken liver, and fish are excellent sources of iron and essential amino acids.

5. Legumes: Lentils, chickpeas, and other legumes are rich in iron, fiber, and other essential nutrients.

6. Green Leafy Vegetables: Spinach, fenugreek, and other green leafy vegetables are rich in iron, vitamins, and minerals.

Unani literature suggests a diet derived from plant, mineral, and animal sources to promote health and address anemia. The recommended foods include:

Nutrient-Rich Diets:

- *Ghiza-e-Lateef* (soft diet)

- *Kaseerut-Taghzia* (highly nutritious diet)
- *Jaiyyad-ul-Kaimus* (easily absorbable foods)
- *Yakhni* (broth made with meat and rice)
- *Shorbae Teetar* (bird's soup)
- *Masoosat* (soups prepared with aromatic spices)
- *Zirbaj* (a sour meat dish with vinegar, honey, acid syrup, raisins, and figs)
- *Sikbaz* (acidic minced meat similar to *Zirbaj*)
- *Zardah* (rice cooked with *Crocus sativa*)

Animal and Dairy-Based Foods	Vegetables	Fruits
Liver	Bathua (<i>Chenopodium album</i>)	Amrood (<i>Psidium guajava</i>)
Kidney	Palak (<i>Spinacia oleracea</i>)	Rumman (<i>Punica granatum</i>)
Meat (Ghost Daraj, Fish)	Cholai (<i>Amaranthus polygamous</i>)	Bahi (<i>Cydonia oblonga</i>)
Eggs	Hulba (<i>Trigonella foenum</i>)	Ananas (<i>Ananas comosus</i>)
Milk	Kaddu (<i>Cucurbita maxima</i>)	Injeer (<i>Ficus carica</i>)
Paneer (cheese)		Aam (<i>Mangifera indica</i>)

This diet, recommended by ancient Unani scholars, aligns with modern nutritional principles. It is rich in essential nutrients like iron, folic acid, vitamin A, vitamin B12, protein, and minerals, which are crucial for overall health and combating anemia.^{21, 22, 23}

2. *Ilaj bil Dawa* (Drug Therapy):

Unani Herbal Remedies for Iron Deficiency Anemia; Unani practitioners employ a range of herbs single and compound drugs renowned for their blood-purifying and hematopoietic properties. Key herbs utilized in the treatment of iron deficiency anemia include:

NO.	Mufrad Dawa (Single Drugs)	Murakkab Dawa (Compound Drugs)
1	Zafran (<i>Crocus sativus</i>)	Sharbat-e-Faulad
2	Maweez Munaqqa (<i>Vitis vinifera</i> linn)	Sharbat-e-Anarain
3	Asaroon (<i>Asarum europaeum</i>)	Sharbat-e-Afsanteen
4	Balchhar (<i>Nardostachys jatamansi</i>)	Sharbat-e-Ananas
5	Halela (<i>Terminalia chebula</i>)	Qurs Khusta Faulad
6	Balela (<i>Terminalia bellerica</i>)	Kushta Sammul Far
7	Amla (<i>Emblica officinalis</i>)	Kushta Nuqrah
8	Qaranfal (<i>Eugenia caryophyllata</i>)	Majoon-e-Dabeed-ul-Ward
9	Bisfajj (<i>Polypodium vulgare</i>)	Majoon Khabsul Hadeed
10	Rai (<i>Brassica juncea</i>)	Jawarish Amla

These drugs are carefully selected and combined to create personalized treatments that address the underlying causes of iron deficiency anemia, promote healthy blood production, and restore overall well-being.^{4,5,7}

Ilaj bil Tadbeer (Regimental Therapy):

Regimental therapies enhance blood circulation, detoxify the body, encompasses lifestyle modifications and procedures tailored to enhance digestion, and promote the production of *Khoon Saleh* (pure blood), which is vital

for *Affal Haiwaniya* (vital functions). Recommended therapies include:

1. Massage Therapy (Dalk): Enhances blood circulation, promoting the delivery of oxygen and nutrients to tissues.^{5,21}

2. Warm Compress (Takmeed) is a therapeutic approach employed in Unani medicine to augment the body's innate capacity for producing and maintaining healthy blood. Given the association between anemia and a cold, moist temperament (Barid wa Ratab Mizaj), Takmeed

counterbalances these characteristics by introducing warmth and stimulating blood production (Dam).^{5,21}

3. Steam Bath Therapy (Hammam): Facilitates detoxification, improves overall health, and boosts the immune system.^{5,21}

4. Physical Exercise (Riyazat): Augments blood flow, strengthens the body's natural capacity for blood production and enhances overall physical fitness.^{5,21}

5. Controlled Bloodletting (Fasd) or Cupping Therapy (Hijama): In selected cases, controlled cupping may be employed to eliminate impure blood (fasad-e-dam), restoring the body's natural balance and promoting healthy blood production.^{5,21}

6. Emetic Therapy (Qai) it is not a direct treatment for anemia, This approach is particularly relevant when anemia is linked to impaired digestive function (Zof-e-Meda), blood impurities (Fasad-e-Dam), or the presence of viscous phlegm (Balgham) that hinders nutrient absorption.^{5,24}

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