



# HYPERLIPIDEMIA (FART-E-TADASSUM FID-DAM) IN UNANI MEDICINE: A THROUGH REVIEW OF CLASSICAL CONCEPTS AND CONTEMPORARY MANAGEMENT

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**Abstract:** **H**YPERLIPIDEMIA is a metabolic disorder which refers to abnormal or impaired levels of lipids in the blood stream. It is defined as increased level of total cholesterol, Low density lipoprotein, & Triglycerides with decreased level of High density Lipoprotein in the blood stream, which contribute a significant risk factor for cardiovascular diseases worldwide. W.H.O reports that raised cholesterol levels increase the risks of heart disease and stroke. Globally, a third of Ischemic heart disease is attributable to high cholesterol. Overall, raised cholesterol is estimated to cause 2.6 million deaths. Primary lipid disorders are usually inherited, whereas secondary disorders are acquired as a result of other medical disorders, such as Thyroid, Diabetes, liver disease, Nephrotic syndrome or alcohol excess. Management of hyperlipidemia requires multiteam intervention include medical, nutritional, and lifestyle modification. Studies suggest that reducing LDL by 1 mg/dl cuts cardiovascular 'Risk' by 1% but raising HDL by 1mg/dl reduces risk by 2-3%. Some ways that have been proved to improve HDL level: like Aerobic exercise for 30 minutes several times in a week, Weight control, Mild to moderate Alcohol consumption, Stopping of smoking, A low trans fatty acids diet and high in mono unsaturated and poly unsaturated acids (PUFA) can raise HDL. Select oils like olive oil, flax seed oil and canola; nuts; and cold water fish and shell fish. Limit high- Glycaemic-load foods such as Pasta and white bread made with refined flour which can lower HDL. On the other hand, huge no. of single & compound Unani herbal formulations like; Luk -e- Maghsul, sirka, kamuni, Garlic, Zanjabeel, Tukhm-e-sudab, Jawarish Falafili, Safoof -e- Mohazzil, Itrifal sagheer and some specific Regimenal Therapies like Massage with Roghan-e-Gul, Roghan-e-jasmine, Roghane-Nardin, Hammam (Turkish Bath), Sitz bath which is significant advantage in controlling blood levels of lipid. [1,2,3,4,5]

In Unani classical literature Phlegm is one of the four *Akhlat* (humour), which is cold & wet in temperament, excess deposition of cold and wet matter such as morbidic phlegm and Fat in those individuals who also have cold temperament are more susceptible to have a pathological condition known as Obesity. Ancient Greek physician Hippocrates writes "An obese person dies earlier in comparison to lean or thin individuals." [6]

**Keywords :** High cholesterol, Unani formulations, Usool - e- Ilaj, Regimenal therapies, cardiovascular disease, phlegm, Dasumat.

## Introduction:

Hyperlipidemia involves abnormally elevated levels of any or all lipids and lipoprotein in the blood. Lipid abnormalities often go unnoticed until they lead to more severe complications like metabolic syndrome or cardiovascular issues. It basically classified as either familial hyperlipidemia or acquired hyperlipidemia. Secondary causes of hyperlipidemia is saturated & trans Fats, Excess calories, Alcohol, red meat, high sugar beverages & foods and some drugs also like Antipsychotics, Beta-blockers, Thiazide diuretics, estrogen-progestin contraceptives and immunosuppressive agents. [7]

Familial hyperlipidemia is transmitted as an autosomal dominant trait and is an important cause of heart disease accounting for nearly 5% of MIs in younger age group. About 1 in 500 persons is heterozygote. The plasma cholesterol levels in these persons are twice as high as normal, i.e. about 300 - 400 mg/dl. This results in accelerated atherosclerosis. These individuals present with *xanthomas*, i.e. distinctive cholesterol deposits in skin and tendons. [8]

In Unani literature blood is a mixture of four *Akhlat* (Humour), Dum (blood), Balgham (phlegm), Safra (yellow bile), Sawda (black bile), are derived from the food often going through the process of *Hudum Arba'a* (four digestive process) for health and normal functioning of the human body, which is mandatory to establish the equal proportion of these four *Akhlat* in human body. [9]

According to **Ibne Nafees**, the *Dasumat* present in blood is of two type *Latif* and *kathif*, the *Latif* part of *Dasumat* is metabolized into *Ghidha* (nutrition) and *Tabai Hararat* (energy) of *Lahmi A'da* (muscular organ) whereas; the *kathif* (heavier) part of the *khilt-e Dam* goes towards the *Baarid A'da* or *Aghshiya* (membrane) where it is solidified due to the *Burudat* (cold) and deposited in the form of *SHAHM* (fat). The *Mizaj* of *Balgham* is *Baarid Ratab*, predominancy of *khilt-e-balgham*, increase the *Burudat* and *Rutubat* in the body. Thus, its dominancy is considered as predisposing factor in the causation of accumulation of abnormal lipid in the form of fat.[10]

**Ali bin Abbas Majoosi** (930 A.D) in his book *Kamil-u-Sana'a* told that *obesity is very dangerous for a person specially when it is primary in stage. Further he told that Hararat Ghrizyya of such person is low and blood vessel of his body are narrow and compressed*[11]. *Sheikh Ibn-e-Sina (980-1030 A.D.) in his famous book AL-Qanoon fit-tib has described the etiology, clinical features, complications and management of obesity in detail.* [12]

The most famous physician of Arabian period **Abu Bakar Mohammed bin Zakariya Razi** (885-925 A.D.) described obesity in about sixty pages in his famous book *Al-Havi Fit- Tib* in Vol.6. He explained the importance of diet therapy in the management of obesity. [13]

Prevention and treatment of hyperlipidemia consists assessment, establishment of treatment goal, increase activity level, Dietary modification, medical therapy, follow up, re-assets and modifying the procedure as necessary.[14]

**Physiology of lipids** : A second important group of organic compounds is **lipids** ( lip- = fat). Lipids make up 18-25% of body mass in lean adults. Like carbohydrate, lipids contain carbon, hydrogen, and oxygen. Most lipids are insoluble in polar solvents such as water; they are hydrophobic. because they are hydrophobic, only the smallest lipids ( some fatty acids) can dissolve in watery blood plasma. other lipid molecules join with hydrophilic protein molecules, the resulting lipid/protein complexes are termed **lipoproteins**. The diverse lipid family includes fatty acids, triglycerides (fats & oil), phospholipids, steroids and a variety of other lipids, including fat soluble vitamins ( vit- A,D,E & K) and lipoproteins.[15]

Unani scholars were familiar about the presence of fat (*shaham*) in blood, *shaham* and *sameen* is a white and very soft entity. According to **Sheikh Ibn-e-Sina** (980-1030AD) in “ *Al Qanoon fit-tib*” has described “ Fat is formed from wateriness and greasiness of the blood and cold coagulates it. This is why heat dissolves it”. **Ibne Rushd** says that “ *shaham* (fat) is the metabolic waste product (*fuzla*) of mature blood from which different organs of the body obtain their nutrition. Average quantity of *shaham* is a sign of health and low level indicates immaturity of blood or the person is undernourished and excess of fat is not good for health. [16]

### Types of lipids in the body :

<b>FATTY ACIDS:</b>	Used to synthesize triglycerides and phospholipids or catabolized to generate adenosine triphosphate (ATP) .
<b>TRIGLYCERIDES:</b>	Protection , insulation, energy storage.
<b>Phospholipids:</b>	major lipid component of cell membranes.
<b>Steroids</b>	
<b>Cholesterol:</b>	minor component of all animal cell membranes; Precursor of bile salts, vitamin D, and steroid hormones.
<b>Bile salts:</b>	needed for digestion and absorption of dietary lipids.
<b>Vitamin D:</b>	helps regulate calcium level in the body; Needed for bone growth and repair.
<b>Adrenocortical:</b>	help regulate metabolism, resistance.
<b>Hormones</b>	
<b>Sex hormones:</b>	stimulate reproductive functions and sexual characteristics.
<b>Other lipids :</b>	Carotenes Vitamin E , K lipoproteins

**Metabolism of lipids :** TG stores in the body is continually undergoing synthesis and breakdown . many of nutritional, metabolic and hormonal factors regulate either of these two mechanisms, i.e, esterification and lipolysis. Resultant of these two processes determine the magnitude of free fatty acid pool in adipose tissue and this , in turn , will determine the level of free fatty acid circulating in the blood. [17]

### Normal values of lipoproteins

(Normal lipid profile)

Lipid fraction	Normal values
□ • Total cholesterol	150 to 240 mg/dl
Serum HDL-cholesterol	males- 35 to 60 mg/dl
□	Female-40 to 70 gm/dl
Serum TG (Triacyl glycerol)	males- 60 to 165 mg/dl female- 40 to 140 mg/dl
□	
□	
Serum chylomicrons	up to 28 mg/dl ( 14 hrs. post-absorptive state)
VLDL	males- UP to 240 mg/dl Female- up to 210 mg/dl
Serum beta-Lipoproteins (LDL)	UP TO 550 mg/dl
Serum LDL-cholesterol	up to 190 mg/dl

### Complications:

- Cardiovascular disease ; Atherosclerosis, coronary artery disease
- MI & Stroke [18]
- Liver disease
- Diabetes type 2
- Hypothyroid
- Nephrotic syndrome [19]
- Infertility
- Menopause in early age [20]

### Management of Hyperlipidemia in Unani System:

#### Line of treatment (Usool-e-ilaj) :

- Elimination of existing cause.
- Correction of the *sue mizaj*. [21]
- According to Rabban Tabri : Hot & dry food, exercise and walking morning and evening , sleeping before eating , Because it will help to dry the *Hararat & Ratubat* of the body.
- Taking shower with Sulfur water it will also help in reducing Fat. [22]
- Reduce carbohydrate diet for example Butter, milk, sweets, potato, low intake of Salt, Some single drugs like : Barge-e-Sudab , Garlic, Tukhm-e- karafs , Sundrus , zarawand, juntiyanana, Marzanjosh, nankhwah ( Ajwain ) , Razyana ( saunf). [23]
- Vinegar and intake of small quantity of alcohol reduce body fat” and also wrote in reference to Jalinus in his book “ when excess of fat get deposited in the body then stroke, Paralysis, and sudden death may occur. Both *shaham & sameen* are formed by that blood which has the property of Dasoomat ( oily substance). [24]

#### Treatment / Ilaj :

According to **Unani Atibba** like Zakariya Razi and Ibn-e-sine, the treatment of Hyperlipidemia is based on certain principles :

- *Ta'dil-i-mizaj* : The temperament of disease is cold and moist; it needed to be changed by using hot and dry temperament of drugs like : Zanjabeel, Garlic, Luk e Maghsool, sundroos which is known as ilaaj-bi'l Didd. ➤ *Tanqiya-i- Mawad* like Hammam, Fasd, Amal-i-Ta'riq ( Sweating ) ➤ *Taqil-i-Ghidha* ba l'etabar-e- Kamiyyat.
- *Idrar-i-baul* ( Diuretics ) ➤ *Kasrat-i- Riyadat*. [25]

**Unani Treatment broadly classified into following therapies;**

1. **Ilaj bi'l Taghdiya (Diet therapy)**
2. **Ilaj bi'l Dawa (Pharmacotherapy)**
3. **Ilaj bi'l Tadbir (Regimenal Therapy)**

**ILAJ BIL GHIZA (Diet therapy):**

- Dietary reduction of cholesterol with the reduced intake of saturated fats like Sugar & Refined , Packaged & Processed foods, Restrict Animal products, Too much caffeine and Too much Alcohol.
- Foods to eat ; omega-3- Fats , high fiber foods- fruits & vegetables , olive oil , Garlic , Onions , Apple cider Vinegar , Herbs such as Basil, Rosemary & Turmeric .[26] ➤ They should use dry and desiccating food.
- *Ghidha* should be *Mulattif* and decreased in term of *kaifiyat* (quality) not in *kamiyat* (quantity) that means low caloric foods should be use.[
- According to IBN-E-HUBUL BAGHDADI suggested gradual decrease in diet not suddenly.[27]
- Improve immunity by giving purgative medicine.( Razi)
- Roti with honey and khardal.
- *Taqil-i- Ghidha* dried meat should be given.
- Avoid excess sleep .[28]

**Ilaj Bil Dawa (Pharmacotherapy):** *Mudirr-e-Baul* and *Haar yaabis* Drugs in temperament are useful in its management.

Advia Mufradah (Single Unani Drugs):

- Garlic (*Allium sativa*) ▪ Luk-e- Maghsul (*Coccus lacca*)
- Badiyan (*Foeniculum Vulgare* Mill)
- Nankhah / Ajwain (*Ptychotis Ajowan*)
- Baladar (*Semecarpus Anacardium*)
- Tukhme-e Sudab (*Ruta graveolens* linn)
- Bura Armani (Armenian Bole)
- Sirka (Vinegar)
- Darchini (*Cinnamomum Verum*) [29]
- Khar- e - khasak (*Tribulus Terrestris*) ▪ Zanjabeel (*Zingiber officinalis* Linn) [30]



**Compound Unani formulations / Advia Murakkabah :**

- Safoof -e- Mohazzil 6gm along with Arq - e - zeera 20 ml twice a day. [31] ▪ Jawarish kamooni Kabir 5gm twice a day.
- Majun seer Alwi khan
- Itrifal sagheer
- Jawarish Falafili
- Qurs- e- Luk
- Majun Baladuri
- Habb-i -sundroos
- Jawarish Bisbasa (javetri) ▪ Arqe-i-zeerah [32]

**Prescriptions;****NUSKHA-1**

- Zanjabeel (*Zingiber officinalis*),
- Garlic (*Allium sativum*)
- Lemon (*Citrus Aurantifolia*)
- Apple cider vinegar (*Malus sylvestris*)
- Honey (*Apis mellifera*)

Take in sharbat form in dose of 5ml twice in a day with hot water before meal for 3 months. [33]

**Nuskha-2**

- Saboos-e-aspaghol (*Plantago ovata*)
- Sufoof-e-kalonji (*Nigella sativa*)

Dose – 2-4gm twice daily in powder form for 3 months. [34]

**Nuskha – 3**

- Zeerah 10gm
- Ajwain desi 10gm
- Sudab 10gm
- Karafs 10gm
- Saunf 10 gm
- Marzanjosh khushk 10gm
- Luk -e- maghsul 20gm
- Burah 40gm Make a fine powder. Dose - 5gm/day [35]

**ILAJ -BIT- TADBEER (Regimenal Therapy) :**

1. According to Jaalinus after Massage with *Mohallil Roghnaiyat* should be Advice Hammam and after hammam restrict the diet and advice for sleeping or hard working, after that again advice for Hammam and then give nutritious diet which should be reduce in quality .
2. *Ta'areeq* (Diaphoresis)
3. Vigorous Massage after Exercise with Haar & *Mohallil* (Anti-inflammatory) Roghaniyat such as Roghneyasmin , Roghn-e- Nardin, Roghn-e-shibt, Roghn-e-Gul, Roghn-e-Qust.
4. *Hijama* (Cupping)
5. Use of *Mus'hil* (purgative) & Mudir (Diuretic) for producing dryness.

6. Vigorous Exercise like Runnig.
7. Hard work and sleeping on hard bed.[36 37]



## Conclusion:

Hyperlipidemia is a metabolic disorder characterized by an elevation of one or more of the following: Cholesterol, cholesterol esters, phospholipids, or Triglycerides. The term hyperlipidemia in Unani literature accumulation of *AkhlateeGhaliza* that obstruct the affected vessels in favorable conditions & thus pronounced atheromatous plaque, which have to be excrete from the body through *Ghalab-i- Tanqiya-i-khilt*. The derangement in the metabolism of *khilt-i-balgham* affects not only the vascular system, but also cardiac, cerebral & renal system. In Unani system of medicine there are many single drugs and compound formulations which have potential effects in the management of Abnormal Lipid profile and its consequences. If these drugs and formulations are given in a proper manner, they are very effective in the form of alternative source of treatment so many single and compound formulation are experimentally proved. Many Regimental therapies like Hammam, Dalk (Massage), Exercise with Muhallil Roghaniyat along with proper diet management found are very much effective in Unani system to reduce Bad cholesterol levels without any harmful effect on the human body and they all are cost effective management which decrease the economic burden of the country.

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