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ESSENTIAL HYPERTENSION: A CO RELATIONAL APPROACH IN UNANI MEDICINE

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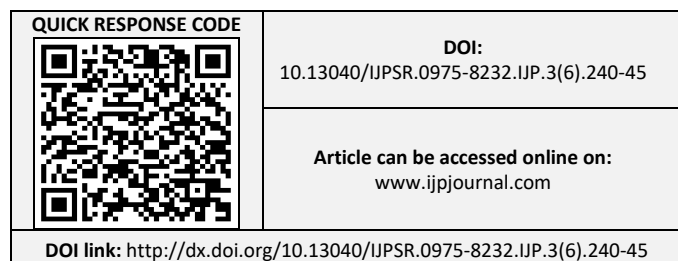
ABSTRACT: Essential hypertension (HTN) is the most prevalent type of HTN, affecting 90 to 95% of hypertensive patients. HTN accounts for a large proportion of all deaths and disability worldwide. It has been predicted that by the year 2020, there will be an increase of almost 75% in the global cardiovascular disease burden because of hypertension. Persistent HTN is one of the risk factors for strokes, heart attacks, heart failure, and arterial aneurysm and also a leading cause of progressive and chronic kidney failure. Unani scholars were familiar with the clinical manifestations of hypertension if we analyze this disease in the context of '*Imtila*' which is manifested by symptoms like headache, vertigo, epistaxis, etc. In this article, the authors have tried to put forth the core concepts of Unani medicine on hypertension in the context of etiopathogenesis, prevention, and pharmacological interventions.

INTRODUCTION: Hypertension is the most common public health problem of the developed as well as developing countries. Hypertension (HTN) or high blood pressure is the sustained elevation of arterial blood pressure; normal values of systolic and diastolic blood pressure at rest are <120 and <80 mmHg respectively). Hence, hypertension is said to be present if blood pressure is found persistently elevated at or above 140/90 mmHg. (JNC 7) ¹ HTN is classically categorized into two kinds: primary hypertension and secondary hypertension.

In primary hypertension, high blood pressure is thought to be idiopathic; whereas secondary hypertension occurs due to secondary causes such as reno-vascular disease, renal failure, aldosteronism, etc. ²

Essential hypertension is a heterogeneous disorder with different causal factors that lead to high blood pressure ³ and accounts for 95% of all cases of hypertension. Globally, it is the leading cause of death and accounts for 13.5% of all deaths ⁴.

According to the Framingham study, hypertensive patients are four times more prone to have cerebrovascular accidents, and a six-fold steep in CHF when compared to the normotensive subjects. ⁵ It is considered as the most easily recognized and treatable risk factor for stroke, myocardial infarction, heart failure, peripheral vascular disease, atrial fibrillation, and end-stage kidney disease ⁴.



The highest prevalence has been noted in African Americans. According to World Health Organization (WHO), epidemiological studies conducted in India from 1995 to 2006 highlight prevalence of hypertension as 29.3% and 25.2% in men and women respectively⁶. In India, 1.5 million deaths occur annually due to cardiovascular diseases. Hypertension is directly responsible for 57% of all deaths due to stroke and 24% due to coronary heart disease. Deaths due to hypertension occur owing to cardiac and cerebrovascular complications such as stroke, congestive heart failure, myocardial infarction, cardiac arrest, and end-stage renal disease¹.

Although the causes of essential hypertension are not known, a number of factors have been linked in the implication of hypertension, such as obesity, insulin resistance, excessive alcohol intake, high salt intake, sedentary lifestyle, stress, and aging; and probably do play some role to some extent in its development³.

The available treatment of hypertension in modern medicine includes several classes of antihypertensive drugs such as diuretics, beta blockers, calcium channel blockers, ACE inhibitors, vasodilators, etc. These agents are effective in controlling the BP of a hypertensive individual but associated with serious side effects such as hyperglycemia, depression, cramps, vomiting, drowsiness, fatigue, dryness of mouth, impotence, dizziness, diarrhea, lost of the test, leucopenia, and constipation etc.⁷ during treatment which commonly leads to its withdrawal. Some of these drugs are toxic to kidneys and also inefficient in controlling symptoms of the hypertensive individual⁷. Therefore Unani medicine which has been treating hypertension mainly through drugs of herbal origin can be used as safe and cost-effective approach in the management of essential hypertension.

There is no description of hypertension as such in the classical literature; Unani scholars were familiar with the manifestations of the hypertension, if we analyze this disease in context of *Imtila'* which is manifested by symptoms like headache, vertigo, epistaxis, etc.⁸ Various single as well as compound formulations have been mentioned for the management of *Imtila'* in Unani

medicine such as *Dawa-us-shifa*, *Habb-e-Mudirr*, *Sharbat-e-Buzoori Motadil*, *Asrol (Rauwolfia serpentina)*, *Lahtan (Allium sativum Linn.)* *Parshi-aoshan (Adiantum capillus) etc.* have been proven for their efficacy in controlling blood pressure^{21, 22}.

Unani Concept: The term “hypertension” has not been used as such in the classical Unani literature; although most of the Unani scholars were familiar with its clinical manifestations, as the detailed description of organs of circulation has been rendered by *Ibn Nafees* (1208-1289). The functions of heart elaborated by Aristotle have been summarily refuted by *Ibn Nafees*. According to *Zakariya Qazvini*, the arteries arise from the left ventricle and serve to propagate the pure air in the entire body⁹.

Ali Abbas mentioned that the basis of health is related to the equilibrium of *Akhlat* (humor) in their quality and quantity. So long this homeostasis is maintained, the body remains healthy¹⁰.

Rutubate Tajaweef (free space fluids) and *Rutubate Uruq* (vascular fluids) constituting the internal environment of the whole body have fixed *Mizaj*. Any deviation in *Kammiyat* (quantity) and *Kaifiyat* (quality) of *Rutubate Tajaweef* and *Rutubate Uruq* or disturbance in the homeostatic condition of the internal environment of the body may cause *Su' Mizaj* (abnormal temperament) of the entire body⁹.

The clinical condition simulating to hypertension has been described under the title of *Imtila'*. It is a diseased condition in which the body fluids are accumulated in different parts of the body particularly in the blood vessels, and its possible English equivalent is “congestion.” (Unani Terminology, CCRUM)

Types:

Imtila' is of two types:

- *Imtila' bi Hasbil Auyia*
- *Imtila' bi Hasbil Quwa*

Razi (820AD), *Majusi* (930AD) and *Ibn Sina* (980AD) have also categorized it into “*Imtila' bi Hasbil Auyia* and *Imtila' bi Hasbil Quwa*” which is clinically observed in hypertension.

Imtila'bi Hasbil Auiya: (Repletion regarding vessels) is an increase in the blood volume resulting in the increased vascular pressure. Unani physicians have regarded the decreased lumen of the blood vessels as an etiology of increased vascular pressure. The salient symptoms are flushing of the body, occasionally lethargy or restlessness, prominent and dilated vessels, congestion of eyes, drowsiness, yawning, the heaviness of head, visual disturbances, loss of appetite, difficulty in performing mental functions, & mental stress, nausea, high volume pulse, and dark cloudy urine^{9, 15, 17, 18, 19}.

A severe form of *Imtila' bi Hasbil Auiya* may cause rupture of the blood vessels with fatal complications such as epistaxis, hemoptysis, hemorrhage, diphtheria, and continuous fever. In such patients, *Fasd* (venesection) is advised to decrease the high blood pressure due to increased blood volume and to prevent the chances of hemorrhage which may at times result in sudden death. For the preventive measures, light diet and rest should be advised^{10, 11, 12, 13, 15, 17, 18, 19}.

Imtila' bi Hasbil Quwa: (Repletion regarding vitality) also known as *Imtila' bi Hasbil Kaifiyah*; this type of *Imtila'* occurs not only due to excess quantity of humor but also the quality of Akhlat is deranged. Humor produced in this condition also deranged the digestion and collection qualitatively & quantitatively. Individuals suffering from the *Imtila' bi Hasbil Quwa* are more prone to have infectious diseases^{9, 11, 13, 15, 17, 18, 19}.

Ibn Rushd says that the increased volume of intracellular fluid may result in *Imtila'*; if associated with abnormal temperament, it is called as *Imtila' bi Hasbil Quwa*¹⁴.

According to *Majoosi*, it occurs due to the weakness of *Tabiyyat*; food is not properly digested, and waste products are formed in the body resulting in heaviness and tiredness¹⁰.

The clinical presentation is heaviness, lethargy, prominent and dilated vessels, congestion of eyes, drowsiness, yawning, heaviness of head, visual disturbances, loss of appetite, difficulty in performing mental functions, mental stress, nausea, high volume pulse, and dark and cloudy urine without flushing of face and *Tamad'dud*. The

complications produced are the same as those of *Imtila' bi Hasbil Quwa*^{13, 15}.

Prevention: In *Imtila' bi Hasbil Auiya*, patients should avoid strenuous works, crying, and bathing; *Qalil Ghiza* (to reduce the quantity of diet) should be advised to the patients. In *Imtila' bi Hasbil Quwa*, actions resulting *Tahlil* in the body should be avoided such as wakefulness, excessive activities, hunger, and excessive evacuation¹³.

In Unani medicine, *Yubusat-e-Urooq* may also cause hardness and narrowing of blood vessels; and the factors responsible for the increased blood pressure are said to be narrowed lumen of vessels. It infers that dryness of blood vessels and narrowing and hardening are inter-related with each other and play an important role in the causation of hypertension. *Ibn Rushd* stated that dryness is an important factor for the narrowing of blood vessels¹⁴. Thus, it can be deduced that dryness is indirectly relevant to hypertension.

Etiopathogenesis: *Majusi* stated that *Imtila'* is caused by excess intake of foods, alcohol, inactivity, and bathing, as these conditions may result in the accumulation of waste products in the body.

Regarding the etiology of *Imtila' bi Hasbil Auiya*, *Razi* says that it results due to consumption of less nutritious foods producing vicious humors in the body. *Majusi* also stated that abnormal accumulation of the morbid matters (both stagnant and active) in the blood vessels may lead to increased tension and pressure. Generally, this *Imtila'* is predisposed by the dominance of increased volume of blood in the blood vessels.

In *Imtila' bi Hasbil Quwa*, the weakness of *Tabiyyat* (physique) is the main etiological factor as vicious matters are not completely evacuated out of the body and their retention produces morbid humors. According to *Ibn Sina*, poor digestion and absorption along with the presence of morbid material ultimately results in weakness of *Quwwat-e-Dafiya*.

According to *Ibn Sina* and *Majusi*, an excess of food intake, alcohol, rest and lack of exercise result in the accumulation of waste product in our body, whether *Mahmooda* (normal) or *Ghair Mahmooda*

(abnormal) both are toxic for the body. This kind of *Imtila'* is usually seen in obese person^{10,11}.

Beside these factors, weakness of blood vessels also serves as the cause stagnation of abnormal humors in the arteries⁹.

Majusi documented that *Sauda Muharraq* leads to *Yubusat* and stiffness in the vessels inhibiting the contraction and relaxation of the blood vessels. The reason for narrowing is generally mediated by the dominance of *Yabis* temperament, which may harden the body vessels equally. Hence, in *Nabz-e-Sulb*, the hardness of the vessels is mediated by the dominance of *Yubusat*, especially in the old age, as excess dryness counters the presence of the wetness which helps in expansion of vessels¹⁰.

Recent research studies conducted on the correlative approach of hypertension, have etiologically classified it into two important kinds:

The dominance of hot and wet (*Damvi*) as well as cold and dry (*Saudavi*) temperaments⁹.

Damvi type is most commonly characterized by an increased volume of the blood. Hence, individuals having *Damvi Mizaj* are more prone to develop hypertension. In *Saudavi* type, there is derangement in the qualities (*kaifiyat*) of the vessels in the form of rigidity and narrowing owing to excess dryness. The predisposing factors are consumption of cold and dry edibles which produce excess black bile in the body.

Now it infers that vaso-constriction which is an important factor in the causation of hypertension may be rendered by the dominance of dryness in the vessels. So, the correlative approach of Unani principle based on excess dryness of vessels along with the increased volume of blood which in turn may cause increased blood pressure, are well linked the pathologic changes of the vessels in hypertension.

Management: As such, there is no description of the treatment of hypertension in classical Unani literature, but the same has been managed on the lines of treatment specific for *Imtila' bi Hasbil Auiya* in which the increased volume of blood is the hallmark of the disease. The first and foremost principle of management is to decrease the

magnitude of *Imtila'* by the reduction of the fluid volume of the vessels, which can be managed both on the principles of pharmacological and non-pharmacological interventions.

Pharmacological intervention includes *Muddir-e-Baul* (Diuretics) drugs so as to reduce *Imtila'*. Moreover, *Musakkin* (sedative), *Munawwim* (hypnotic) and *Mufattih* (deobstruent) drugs are also advised to address the anxiety and mental stress.

Summarily, *Imtila'* (hypertension) is commonly managed on the following three principles:

- ❖ *Ilaj bil-Ghiza* (Dietotherapy)
- ❖ *Ilaj bit-Tadbeer* (Regimenal therapy)
- ❖ *Ilaj bil-Dawa* (Pharmacotherapy)^{20, 21}

1. Ilaj bil-Ghiza: *Ilaj bil Ghiza* has an important role in the prevention of hypertension rather than its control. In the Unani system of medicine, there are elaborative dietary recommendations that are very beneficial for prevention hypertension, as the common risk factors such as hyperlipidemia & atherosclerosis, are better controlled by dietary measures. Diets containing high potassium may slightly lower the blood pressure. Some Unani drugs which are considered as anti-hyperlipidemia and anxiolytic such as *Kalonji* (*Nigela sativa*), *Lehsan* (*Allium sativum*), *Zeera Siyah* (*Carum carvi*), *Kishniz* (*Coriandrum sativum*), *Piyaz* (*Allium cepa*), and *Gajar* (*Daucus carota*) are also beneficial in hypertension²¹.

2. Ilaj bit -Tadbeer (Regimenal Therapy): *Ilaj bit Tadbeer* is the modification in *Asbab-e-Sitta Zarooriya* (six essential prerequisites). This mode of treatment is very effective in prevention as well as control of *Imtila'* (hypertension). Having adequate sleep, increased physical activity, reduction of mental tension and anxiety may reduce the clinical implications of '*Imtila'*'. Some common regimenal therapies for the management of *Imtila'* are mentioned as under *Fasd* (venesection), *Ta'leeq* (leeching), *Is'hal* (purgation), *Ta'reeq* (diaphoresis)^{15, 20, 21}.

3. Ilaj bil-Dawa (Pharmacotherapy): Several single and compound formulations have been used

in the management of *Imtila*, which may prove useful in hypertension as well, which are as under:

Mudirr (diuretic), *Mufattih* (vasodilator), *Mubarrid* (refrigerant), *Munawwim* (hypnotic), *Musakkin* (sedative), *Mufarrih* (exhilarant).

The following drugs are frequently used in the management of the disease:

(1) **Mudirr (Diuretic):** Tukhm-e-Kharpaza (*Cucumis milo* Linn.), Tukhm-e-Kheyarain (*Cucumis sativa*), Parshi-aoshan (*Adiantum capillus*), *Habb-e-Mudirr*, *Sharbat-e-Buzoori Motadil*

(2) **Musakkin (Sedative):** Sankhaholi (*Evolvulus alsinoides* Linn.), Asrol (*Rauwolfia serpentina*), Tukhm-e-Kahu (*Lactuca sativa* Linn.), Gul-e-Neelofar (*Nymphaea lotus*).

(3) **Mufattih (Vasodilator):** Lahsan (*Alium sativum* Linn.), Chaal Arjun (*Terminalia arjuna* Linn.)

(4) **Mufarrih (Exhilarant):** Abresham (Silk coccon), Sandal Safaid (*Santalum album*), Sankhaholi (*Evolvulus alsinoides* Linn.)

(5) **Munawwim (Hypnotic):** *Ikseer-e- Shifa*, *Roughan-e-Laboob Sab'a*, *Roughn-e-Khash'khash*, kahu () kazoos, () kazoos,

(6) **Mubarrid (Refrigerant):** Tukhm-e-Khirfa (*Portulaca oleracea* Linn.), Kishneez (*Coriandrum sativum* Linn.), Tukhm-e-Kahu (*Lactuca sativa*), Gul-e-Neelofar (*Nymphaea lotus*)^{16, 20, 21}.

CONCLUSION: Form the above description, it infers that Unani medicine is poised to treat hypertension with various modalities of treatments based on the therapeutic lines of *Imtila*. The clinical presentations are closely simulated those of hypertension which indicates that Unani scholars were familiar with hypertension to some extent. Thus, Unani medicine plays a pivotal role in the prevention and treatment of hypertension with utmost utilization of various therapeutic modalities mentioned in classical Unani literature.

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