



Review Article

Concept of Zaght al-Dam-Qawi (Hypertension) and its Management Modalities in Unani System of Medicine

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A B S T R A C T

The scope of Unani medicine is increasing day by day as people are becoming more interested in herbal and organic world. However, Unani (herbal) knowledge needs to be coupled with scientific documented research done to verify its efficacy. The aim of this paper is to provide updated knowledge on hypertension and its management in the Unani system of medicine. Hypertension is a major health hazard globally especially in developed countries. In the Unani system of medicine, there are mudirrat (diuretics) to reduce body fluids and minerals, and musakkin (relaxants) and munawwim (sedatives) are also advised by Unani physicians to reduce anxiety. Unani physician, Razi recommends venesection for this particular ailment. Unani physicians have given the concept of hypertension as "Imtila-ba-Hasb-ul-Auiya" and have said that this occurs due to sue-e-mizaj damwi and comes under the heading of Imtila. Literally 'Imtala' means gathering and fullness of the body with madda (fluids). To be precise, it means there is a buildup of normal or abnormal fluids in the body. Unani physicians were all aware of the concept of Zaghta e damwi (blood pressure). Systole as 'Zaghta-e-Inqabazi' and diastole as 'Zaghta-e-Inbesati' is well depicted in the Unani literature. Most of the world's population, mainly in developing countries, use herbal medicines for primary health care because of their ancient tradition, culture, and minor side effects. Various kinds of research have been conducted regarding the hypotensive and antihypertensive therapeutic values of local medicinal plants in the recent past, and they have provided evidence for the antihypertensive effects of some of these plants.

Keywords: Hypertension, Zaght Al-Dam-Qawi, Unani Medicine, High Blood Pressure, Non Communicable Disease, Lifestyle Disorder



Introduction

Hypertension (HTN) or high Blood Pressure (BP) is a chronic medical condition involving the persistent elevation of BP in the arteries above an arbitrary limit of 130 systolic and 80 mm Hg diastolic BP during rest. It is categorised as either primary (essential) or secondary hypertension. In approximately 90-95% of the cases, no medical cause can be found which is termed as "primary HTN" and the remaining 5-10% of cases are caused by other conditions due to the involvement of kidneys, arteries, heart, or endocrine system and is known as secondary HTN.

The condition of hypertension is characterised by Blood Pressure (BP) that is consistently ≥ 130 and/or ≥ 80 mm Hg. However, for the majority of patients with hypertension, blood pressure varies between 130-139/ 80-89 mm Hg (stage 1 hypertension) and ≥ 140 systolic or ≥ 90 mm Hg diastolic (stage 2 hypertension). These categories should not be based on single BP reading but rather should be confirmed by two or more readings (averaged) made on two separate occasions.¹

The clinical features demonstrating hypertension have been mentioned in Unani classical text under the heading of *Imtila-ba-Hasb-ul-Auiya* (repletion in regard of vessels), an increase in blood volume leading to increased vascular pressure, making the pulse hyper-volemic. In such patients, frequent epistaxis, headache, visual disturbance and rupture of blood vessels or even death may occur. *Ibn-e Sina* (Avicenna), an eminent physician of Unani medicine advised for *husne-tadabeer* (lifestyle modifications) i.e. modification in *Asbaab-e sitta-e Zarooriya* (six essential factors of life).²

Hypertension is the most common risk factor for NCDs burden in India. Fourth National Family Health Survey assessed hypertension in a large population-based sample ($n = 799, 228$) and reported hypertension in 13.8% of men vs 8.8% of women (overall 11.3%) aged 15-49 years and 15-54 years respectively. 1.63 million deaths in India were caused by hypertension in 2016 as compared to 0.78 million in 1990 (+ 108%), as per the reports of Global Burden of Diseases. The disease burden (DALYs) attributable to hypertension increased from 21 million in 1990 to 39 million in 2016 (+ 89%).³

It is estimated that in early age the incidence is 15-20% and in the age group of 70 years or more the incidence is 75-80%.⁴ According to WHO, around 1.13 billion people have hypertension, 1 in 4 men and 1 in 5 women had hypertension in 2015. It also states that <1 in 5 people with hypertension have the problem under control. The World Health Organisation (WHO) estimates that high blood pressure directly or indirectly causes the deaths of at least nine million people globally every year.⁵

In present times, cardiovascular disease (CVD) is a major challenge for human beings. It accounts for approximately 50% of all deaths worldwide and is the leading cause of death in western and developing countries.⁶ Amongst, CVDs, hypertension is the leading cause of death worldwide and accounts for 13.5% of all deaths.⁷ Hypertension is also emerging as a major health problem in India. It accounts for two-thirds of all strokes and one-half of all ischemic heart diseases in India.⁸ Hypertension is one of the major risk factors for stroke, heart attack, heart failure, and kidney failure, thereby being the cause of deaths and disability worldwide. Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths.⁹

Primary or essential hypertension, which refers to high BP for which no medical cause can be found, constitutes 90% to 95% of cases.⁶ The remaining 5 to 10% of cases, come under secondary hypertension, which is known to be caused by some other conditions that affect the kidneys, arteries, heart, or endocrine system.¹⁰ Hypertension is a major public health problem due to its high prevalence all around the globe.⁶ Around 7.5 million deaths or 12.8% of the total of all annual deaths worldwide occur due to high blood pressure.⁷ It is estimated that there will be 1.56 billion adults globally with hypertension till 2025.¹¹

As hypertension has become a real threat for mankind, and the allopathic medications used for it such as diuretics, beta-blockers, calcium channel blockers, ACE inhibitors, vasodilators, etc. cause various adverse effects like electrolyte imbalance, insomnia, bradycardia, and liver dysfunction. Therefore, the use of herbal drugs alternatively for managing hypertension mentioned in Unani literature opens new avenues to tackle this mammoth crisis.

Masih-ul Mulk Hakim Ajmal Khan in the 1920s was the first to perceive the concept of research in Unani medicine. Multitalented brilliant of his time, Hakim Ajmal Khan spotted a chemist named Dr Salimuzzaman Siddiqui for undertaking chemical studies on a few significant medicinal plants used in Unani Medicine. Dr Siddiqui materialised the vision of Masih ul Mulk. The discovery of the medicinal property of the herb *Asrol* (*Pagalbooti*), after continuous research led to the establishment of the exceptional effect of this plant known as *Rauwolfia serpentina* in neurovascular and nervous illnesses, such as hypertension, insanity, schizophrenia, hysteria, insomnia, and psychosomatic conditions etc.¹²

The ajmaline, ajmalinine, and ajmalicine compounds were first isolated by Dr. Salimuzzaman Siddiqui in 1931 from the roots of *Rauwolfia serpentina*.¹³ He named these alkaloids after Hakim Ajmal Khan, one of the most renowned practitioners of Unani medicine.

Aetiology/ Risk Factors

Primary Hypertension

Although no obvious cause has been identified itself, there are many factors such as:

- Sedentary lifestyle⁷
- Stress, visceral obesity⁷
- Potassium deficiency (hypokalemia)⁸
- **Obesity:** More than 85% of cases occur in those with a BMI greater than 25^{14,15}
- Salt (sodium) sensitivity¹⁶
- Harmful use of alcohol¹⁷
- Vitamin D deficiency¹⁸
- **Ageing:** Risk also increases with ageing¹⁹
- Some inherited genetic mutations²⁰
- Having a family history²¹
- An elevation of rennin, an enzyme secreted by the kidney, is another contributing factor²²
- Sympathetic nervous system over activity²²
- Insulin resistance also contributes to hypertension²⁴

Secondary Hypertension

Hypertension (HTN) occurs due to compromise or imbalance of the patho-physiological mechanisms, such as the hormone-regulating endocrine system, that regulates blood plasma volume and heart function. Many conditions cause HTN. Some are common and well-recognised secondary causes such as Cushing's syndrome, which is a condition where the adrenal glands overproduce the hormone cortisol.²³ In addition, HTN is caused by other conditions that cause hormone changes such as hyperthyroidism, hypothyroidism, and adrenal gland cancer. Other common causes of secondary HTN include kidney diseases, obesity/metabolic disorder, pre-eclampsia during pregnancy, the congenital defect known as coarctation of the aorta, and certain medications.

Concept of Hypertension in Unani System of Medicine

The most important cause of hypertension is *Imtila-e-Dam*, which is of two types:

- *Imtila bi Hasb al-Aw'iyā* (Repletion in regard to vessels)
- *Imtilabi Hasb al-Quwa* (Repletion in regard to power)

In *Imtila-ba-Hasb-ul-Auiya* there is a rise in blood volume resulting in increased vascular pressure. Generally, *Imtila-ba-Hasb-ul-Auiya* (repletion regarding vessels) is the condition, where an increase in the blood volume occurs, due to which the intra-arterial pressure is raised, the pulse gets hypervolemic and is hard on feel. Such patients develop the tendency of frequent epistaxis, headache, and visual disturbances and at times the rupture of vessels resulting in fatal complications. This type of *Imtila* is due to excessive accumulation of metabolic products, whether *mahmooda*

(beneficial) or *ghair-mahmooda* (harmful), and this type of congestion is common among obese people.²

In the condition of *Imtila-e-dam bahasb-ul quwa* (repletion in regard to power), there is disturbance of *quwwat-e-nafsaniya*, *quwwat-e-mudabbira badan* and *quwwat-e-tabia* of the body. In this, the disturbance of *quwwat-e-tabia* leads to altered digestion which results in injurious byproducts. Likewise, altered *quwwat-e-nafsaniya* and *quwwat-e-mudabbira badan* also deteriorate body systems at the very minute levels, so that even a small quantity of toxic byproducts may cause symptoms of *Imtila*.^{14,28,32}

An excess of food intake and alcohol, sedentary lifestyle and lack of exercise causes an increase in waste products in our body. Excess of *mahmooda* (normal) or *ghair-mahmooda* (abnormal), both lead to congestion (*imtila*) and are toxic for the body. This condition of *imtila* is commonly found in obese people. This was the view of famous Unani physicians, Ibn Sina and Majusi. One of the factors responsible for stagnation of abnormal humors at any place is weakness of arteries.³²

Patho-physiology

Essentially, Blood Pressure (BP) is the outcome of cardiac output and peripheral vascular resistance ($BP = \text{cardiac output} \times \text{peripheral vascular resistance}$). Therefore, maintenance of a normal BP depends on the balance between cardiac output and peripheral vascular resistance.⁹

The pathogenesis of hypertension is multi-factorial and highly complex. Many factors (and risk factors) have been implicated in the genesis of essential and secondary hypertension.⁸

Essential Hypertension

- Increased sympathetic nervous system activity
- Increased production of sodium-retaining hormones and vasoconstrictors
- Deficiencies of vasodilators such as prostacyclin and nitric oxide
- Inappropriate or increased renin secretion, resulting in increased production of angiotensin-II and aldosterone
- Genetic predisposition

Secondary Hypertension

The common identifiable causes of hypertension are the following:

- Chronic kidney disease
- Renovascular disease
- Cushing's syndrome (hypersecretion of the hormone cortisol)
- Pheochromocytoma (adrenal tumour)
- Drugs such as non-steroidal anti-inflammatory drugs (NSAIDs) and oral contraceptive

Complications

The complications of untreated/ uncontrolled hypertension include:⁷

- Stroke
- Aortic aneurysm
- Myocardial infarction
- Congestive heart failure
- Cardiac enlargement
- Left ventricular hypertrophy
- Renal insufficiency
- Cerebral thrombosis or embolisation

Management in Unani System of Medicine

In Unani medicine, control of 'Imtila' (Hypertension) is classified into 3 groups:

Ilaaj-bil-Ghiza (Dietotherapy)

In the Unani system of medicine, there are elaborative dietary recommendations that are very beneficial for the prevention of hypertension, as the common risk factors such as hyperlipidemia and atherosclerosis, are better regulated by dietary measures. Diets containing high potassium may slightly lower blood pressure. Some Unani drugs which are considered as anti-hyperlipidemic and anxiolytic such as Kalonji (*Nigela sativa*), Lehsan (*Allium sativum*), Zeera Siyah (*Carum carvi*), Kishniz (*Coriandrum sativum*), Piyaz (*Allium cepa*), and Gajar (*Daucas carota*) are also beneficial in hypertension.²⁸ There are several ways in which high blood pressure can be prevented. Some of them are as follows:

- Maintain a healthy weight as per age, height and sex
- Reduce salt intake to less than 5 g daily
- Eating fibre rich diet with fruits and vegetables
- Cessation of tobacco use
- Reduce alcohol consumption
- Reduce intake of foods rich in saturated fats

Ilaaj bil-Tadbeer (Regimental Therapy)

Ilaaj bil-Tadbeer is the modification in Asbab-e-Sitta Zaro-oriya (six essential prerequisites). This mode of treatment is very effective for the prevention and 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 regimental therapies for the management of 'Imtila' are Cupping (Hijamah), (venesection), *Ta'leeq* (leeching), *Is'hal* (purgative), *Ta'reeq* (diaphoresis).^{27,28,29,33}

Ilaaj bil-Dawa (Pharmacotherapy)

Several single and compound formulations have been used in the management of 'Imtila', which may be useful in hypertension.

The following drugs are frequently used in the management

of hypertension:

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

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

Mufattihat-e-Urooq (Vasodilator): Lahsun (*Alium sativum* Linn.), Chaal Arjun (*Terminalia arjuna* Linn.). Compound formulations; Dawa-UI-Kurkum.

Mufarrihat (Exhilarant): Abresham (Silk cocoon), Sandal Sufaid (*Santalum album*), Sankhaholi (*Evolvulus alsinoides* Linn.). Compound formulation; Dawa-ul-Misk.

Munawwimat (Hypnotic): Asrol (*Rauwolfia serpentina*), Ood e Saleeb (*Poenia officinalis*), Naremuskh (*Mesua ferrea*). Compound formulations; Ikseer-e-Shifa, Roughan-e-LaboobSab'a, Roughn-e-khash'khash, Roughn-e-kahu, Roughn-e-kadoo, Asrofeen.

Mubarridat (Refrigerant): Tukhm-e-Khurfa (*Portulaca oleracea* Linn.), Kishneez (*Coriandrum sativum* Linn.), Tukhm-e-Kahu (*Lactuca sativa*), Gul-e-Neelofar (*Nymphaea lotus*).^{25, 27, 29} Compound formulations; Qurs Tabasheer Kafoori, Sharbat-e-Nilofar.

Conclusion

Hypertension burdens the community with early mortality and disability. Moreover, its expensive treatment along with the side effects of drugs compels people to be irregular with their prescriptions. Hence, alternatives to cope up with this problem are required. Unani system of medicine provides a full regimen for the control and prevention of hypertension. Each and every regimen of the Unani system of medicine has its own benevolent effects. Thus, Unani medicine plays a pivotal role in the prevention and management of hypertension with the utmost utilisation of various therapeutic modalities mentioned in classical Unani literature.

Conflict of Interest: None

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