

INTERNATIONAL JOURNAL OF UNANI AND INTEGRATIVE MEDICINE



E-ISSN: 2616-4558
P-ISSN: 2616-454X
IJUM 2017; 1(1): 17-20
Received: 06-05-2017
Accepted: 08-06-2017

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Concept and management of hypertension: A review

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Abstract

Hypertension is one of the health concern worldwide due to its strong association with cardiovascular accidents. Hypertension as a disease entity is being well described by the Unani physicians under the context of *Imtila* (plethora). The term hypertension or *Zaghtuddam Qawi* has not mentioned in any of the classical Unani literature. *Avicenna* in his masterpiece Canon of Medicine described in detail about the clinical features, Causes, and complication of hypertension which resembles with *Imtila ba hasb ul awaiya*. Unani physicians were all aware of *Zaghta-e-damwi* (Blood pressure). They were regarded *Zaghta-e-Inqabazi* as Systole and *Zaghta-e-Inbesati* as Diastole. *Ibnul Nafees al Damishqui* (1208-1289) has described the organs of circulation.

Keywords: hypertension, *Imtila*, *Unani Medicine*, *Imtila-Ba-Hasbul Aw'iyya*

Introduction

WHO defined Hypertension for instance when the systolic blood pressure equals to or above 140 mmHg and diastolic blood pressure equals to or above 90 mm Hg^[1]. Hypertension (*Zaghtuddam Qawi*) is a hemodynamic derangement^[2] and a chronic condition of concern due to its role in the causativeness of coronary heart disease, stroke and other vascular complications^[3]. It has been termed the "silent killer" with a long asymptomatic phase that, if undetected and untreated, silently damages the heart, brain, and kidneys^[4]. It is a major risk factor for the development of cardiovascular disease. Hypertensive when compared to normotensives progress twice as coronary heart disease, four times as much congestive heart failure and seven times as much stroke. While there is no critical level, the risk of cardiovascular disease rises progressively with the level of systolic and diastolic blood pressure^[5]. Initial at 115/75 mmHg, cardio-vascular disease risk doubles with each augmentation of 20/10 mmHg throughout the blood pressure range^[6]. Though the extent of organ damage often correlates with the level of blood pressure, it is not always the case. In addition, the rate of progression of organ damage varies from one individual to another depending on many influences, most of which are incompletely understood^[3].

Classification of seventh report of the Joint Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure^[7]:

BP Classification	SBP mmHg	DBP mmHg
Normal	<120	<80
Prehypertension	120-139	80-89
Stage 1 hypertension	140-159	90-99
Stage 2 hypertension	>160	>100

Classification of European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC)^[7]:

Category	Systolic	Diastolic
Optimal	<120	<80
Normal	120-129	80-84
High normal	130-139	85-89
Grade 1 hypertension	140-159	90-99
Grade 2 hypertension	160-179	100-109
Grade 3 hypertension	>180	>110
Isolated systolic hypertension	>140	<90

Hypertension is both curable as well as preventable condition. Keeping in concern the urge to fight with this ever-persisting condition, the therapies that are more efficacious, convenient, and cheap, with least side effects should be adopted. One of such is the Unani system of medicine.

Hypertension in adults age 18 years and older is defined as systolic blood pressure [SBP] of

140 mm Hg or greater and/or diastolic blood pressure [DBP] of 90 mm Hg or greater or any level of blood pressure in patients taking antihypertensive medication^[5].

Classification^[7]

1. **Primary or Idiopathic or Essential Hypertension:** It is defined as high BP in which secondary causes such as Reno vascular disease, renal failure, or other causes of secondary hypertension are not present.
2. **Secondary or identifiable Hypertension:** Patients having renal or adrenal disease, narrowing of renal artery, usually by an atheromatous plaque or other identifiable cause. This is known as secondary or identifiable Hypertension.
3. **Labile Hypertension:** Some individuals appear to have wide wings in blood pressure, and have been called labile hypertension.
4. **Borderline Hypertension:** A patient found to have an abnormal blood pressure at their first visit to the doctor will have lower blood pressure on subsequent visits.
5. **White-coat Hypertension (Isolated Clinical Hypertension):** It is condition, in which an individual is hypertensive during repeated Clinical Blood Pressure Measurement (CBPM), but pressure measured outside the medical environment by Ambulatory Blood Pressure Measurement (ABPM) or Self Blood Pressure Measurement (SBPM) techniques are normal.
6. **Masked Hypertension (Isolated Ambulatory Hypertension):** This Phenomenon refers to patients in whom CBPM is normal but ABPM or SBPM are increased; in other words, hypertension is hidden until ABPM or SBPM is performed.
7. **Isolated Systolic Hypertension:** It is defined as SBP of 140 mmHg or greater than and DBP below 90 mmHg and staged appropriately.
8. **Isolated Diastolic Hypertension:** It is defined as SBP of below 140 mmHg and DBP 90 mmHg or higher and staged appropriately.
9. **Malignant Hypertension:** It embraces a syndrome of severe elevation of arterial blood pressure with vascular damage that can be particularly manifest as retinal hemorrhages, exudates and/or papilledema.

Patho-Physiology

No specific cause of primary hypertension has been firmly established. The factors have been predictable to play a role in hypertension are Increased circulating fluid volume, Increase peripheral resistance, other pathogenic factors, and contributing factors^[5].

A WHO Scientific Group has reviewed the risk factors for primary hypertension as

1. Non-modifiable risk factors: Age, sex, genetic factors and ethnicity
2. Modifiable risk factors: Obesity, salt intake, saturated fat, dietary fiber, alcohol, heart rate,
3. Physical activity, environmental stress, socio economic

status and other factors^[3].

Hypertension in Unani System of Medicine:

Ancient physician were aware of Zaghta-e-damwi (Blood pressure). They were considered Zaghta-e-Inqabazi as Systole and Zaghta-e-Inbesati as Diastole^[8]. The organs of circulation have been described by Ibnul Nafees. The function of heart described by Aristotle has been completely negated by Ibn Nafees al Damishqui and Zakariyya Qazvini.

According to Zakariyya Qazvini:^[9]

“The arteries arise from the left ventricle so as to infuse the pure air in the entire body and veins from the right side”. When blood pressure is more than normal it is consider as high blood pressure or hypertension^[10]. In al-Malki by Al-Abbas, has mentioned that the basis of health is right proportion and specific equilibrium of akhlat (humours) according to their quality i.e. homeostasis in the internal environment. Hence, so long this homeostasis in the internal environment is maintained the body remains healthy. Ratubat tajawif and ratubat uruq which make the internal environment of the whole body have also fixed Mizaj (homeostasis) fluctuating within certain maximum and minimum limits. Any disturbance in kamiyat (quantity) and kafiyyat (quality-composition) of ratubat al-tajawif or ratubatul uruq (internal environment of the body) or disturbance in the homeostatic condition of the internal environment of the body causes su'al Mizaj of the entire body^[11]. Increase blood volume produce risk in blood pressure. It indicates nabz mumtali (full or hypervolumic pulse). This is seen when cardiac output is more than eventually. Unani scholars gave plenty description about the blood pressure determinants but they were incapable to assemble these descriptions as disease. Modern Unani physicians and authors use the term Zaghtuddam Qawi to entitle the hypertension. Zaghtuddam Qawi in present concept cannot be found from the classics of Unani. Yet the condition called “Imtila” has been widely conversed by all the Unani philosophers in the history. When studied thoroughly the clinical featured of Imtila in classical literature of Unani Medicine corresponding with the clinical features as encountered in the patients of hypertension. Therefore, we can co-relate that both these terms, Imtila and Hypertension to the same context. Later on Unani physician translate Hypertension as “Zaghtuddam Qawi” Anything, that increases venous return, also increases cardiac out can be considered *Imtila-ba-hasbul aw'iyya*.

In Unani and modern medicine, the increase venous return (increase cardiac output) is the mirror image of *Imtila-ba-hasbul aw'iyya*.^[11] Erasistratus determined that disease was due to plethora. When local excesses of blood accumulated in the veins, the Overloaded vessels were damaged and blood leaked from the veins into the arteries. When this happened, the flow of vital spirit, which was supposed to be disseminated by the arteries, would be obstructed^[12].

Unani physician has given the concept of hypertension as *Imtila ba Hasbil aw'iyya*. and said this occur due to sue-e-mijaz damwi and comes under the heading of Imtila. They also believed that hypertension is a manifestation of yabusat-e-mizaj (dryness) which is the main cause of atherosclerosis. Dryness causes hardening and narrowing of blood vessels. Hypertension is a condition associated with headache (especially in the morning) palpitation, breathlessness, fatigue (especially in the evening), flushing

of the face and sometimes epistaxis. These symptoms may or may not be present in all the cases.

Types of Hypertension

Unani physicians classified *Imtila* into two categories:

(i) *Al Imtila Bihasbil Aw'iyya* and (ii) *Al Imtila Bihasbil Quwwa*

Al Imtila Bihasbil Aw'iyya:

Imtila-ba-hasbul auyia means the quality of humors and vital forces (*Akhlat wa Arwah*) is normal but the quantity of humors is increased so much that the blood vessels become overfull and distended. In these cases there is always the danger that exertion might rupture blood vessels and release humors towards the orifices liable to constriction and thus produce *khunaq* (hypoxia/ischaemia), *sara* (epilepsy) and *sakta* (apoplexy). This type of plethora needs treatment by prompt venesection^[13, 14]. Razi said although there is increase in humour but the ratio before and after *Imtila* is same^[15].

Imtila bi hisbil aw'iyya consists of undue amount of humors or ruh, but their quality is healthy, and merely superabundant in quantity, so that the channels are overfilled and distended. Those who are affected (with *Imtila*), such individual's physical activities are likely to threaten themselves. Sometimes *Imtila* cause rupture of vessels, followed by a flux towards the regions where there is backpressure and choking (anoxia) of these parts may occur, with subsequent palpitation, epilepsy and or paralysis. To relieve such, the *Imtila*, it must be relieved rapidly by Venesection^[13, 14, 16, 17]. Razi said although there is increase in humour but the ratio before and after *Imtila* is same^[15].

Imtila bi hasbil Quwwa:

Imtila-ba-hasbul quwa is also called *Imtila-bahasbul-kaifiyat*.¹⁰ In *Imtila-ba-hasbul quwa* the trouble is not only because of the general excess of humors but their quality is also abnormal. Such humors Overwhelms the vitality of the body with their morbid nature and do not yield to the processes of digestion and coction. Person suffering from *Imtila-ba-hasbul quwa* are more prone to infectious disease.^[13, 14, 18, 19] Before the onset of the symptoms of *Imtila bi hisbil quwwa*, the diseases manifests, later the symptoms (of *Imtila*) will appear. Whereas, in *Imtila bi hisbil away'ya*, the symptoms marked first, then the disease appears.

Symptoms / signs of *Imtila*^[16, 17]:

- Heaviness of Body (اعضاء کا بوجھل بوجنا نا)
- Stretching of skin (جلد کا ممد ہونا)
- Engorgement of vessels (رگوں کا پھولا ہوا ہونا)
- Heaviness in body movements / Lethargy (حرکات میں کسلمندی)
- Redness of complexion (بدن کے رنگ کا سرخ ہونا)
- Reduced appetite (بھوک کا کم ہونا) / Loss of libido (قلت شہوت)
- Blurring of vision (بینائی کا سست ہونا)
- Fullness of pulse (نبض کا ممتلی ہونا)
- Dense and discolored Urine (Hematuria) (قا رورہ کا رنگین و گاڑہ ہونا)
- Dreams indicating heaviness (خواب جو ثقل کو بتاے)
- Palpitation- Tachycardia (خفقان)

Complication

Aristotle said that, when blood becomes *fasid* (deranged blood) it flows toward nose and rectum^[19]. Severe *Imtila* may be responsible for haemorrhage, apoplexy and sudden death^[20].

Unani Integrated Scheme for the Management, Prevention and Control of Hypertension

Hypertension is a life style problem and life style modifications is a perfect management, control and prevention of it. Following the three basic principles of Unani system of medicine, one can treat as well as prevent the adjoined consequences of the *silent killer*-Hypertension. These are a. *Ialj bil ghiza* (Dietotherapy) b. *Ilaj bit tadbeer* (Regimenal therapies) and c. *Ilaj bil dawa* (Pharmacological treatment).

A. *Ilaj bil ghiza*/Dietotherapy:- For therapeutic purpose-*Taqleele ghiza, Ghiza Mufarrigh, Ghiza Mulattif* are used.

For preventive purpose- Subsequent the six essentials of life (*Asbabe sita zarooria*), if one takes the diet in proper quantity & quality i.e. according to energy consumption per day, proper timings, proper sequence (first *ghiza ghaleez* followed by *ghiza lateef*) & according to habit, can be protected from a number of diseases^[20].

B. *Ilaj bit tadbeer*/ Regimenal therapies -The regimenal therapies mentioned in Unani system of medicine are basically applied for *Ilaj bil Istiferagh* (evacuation of madda/ matter causing disease and rectifying the humours). These includes *Fasd* / venesection, *Hijama Bil Shurt* / wet cupping, (*massage*) *Nutool*.

***Fasd* /venesection** a procedure of bloodletting, provides immediate relief in the symptoms & prevents the complications of hypertension^[20, 15].

Hijama Bil Shart/wet cupping It relieves *Imtila* in which bleeding is promoted by incising the superficial small vessels, located in muscles. *Hijama* on *Al Kahil* (the intra scapular region excluding vertebral column) is recommended for Hypertension^[7].

The author of *Al Hawi Fit Tib* Al Razi has mentioned *Hijama* on *Al Kahil* (the intra scapular region excluding vertebral column) for the treatment of *Imtilae Dam* with *Khafqan*^[24].

Al-Zahrawi has described "the application of cupping in between the shoulders helps in *Khafqan* of the heart arising from *Imtila*^[25]. It has been trialed and reported that *Hijama* on *Al Kahil* is proved to be effective in the management of hypertension for several months^[26].

Hypertension is considered as a type of *Imtila*, then as per the prescription of Unani Physicians like Al Zohravi, AlRazi, Ibn Sina, Fas'd is to be undertaken immediately, to counter the adverse effects of the condition.

But, certain conditions are not favourable for Fa'sd as such defined by *Ismail Ahamd Al Hassan Muhammad Ahmad Al Hasni Al Jurjani* (Jurjani) in his compendium "*Zakhirae Khuwarjam Shahi*" and recommended *Hijamat* over Fas'd. *Nutool* is a technique of dropping oil/decoction of certain drugs on head from some height, is used for therapeutic purpose to relieve headache & heaviness and more specifically to change the temperament of the organ^[16].

C. *Ilaj bil dawa* / Pharmacological treatment:- There are a number of anti-hypertensive drugs available like calcium channel blockers, ACE inhibitors, beta-adrenoreceptors etc, but their side effects like weakness, fatigue, leg cramps, depression, hacking cough, skin rashes, swollen ankles, palpitations, anaemia, constipation, fever, diarrhoea, heartburn, excessive hair growth, headache, dizziness, numbness & pain in toes, dryness of mouth & eyes, sleeping difficulties etc. always make it troublesome for the users^[21]. Keeping in mind the effect & side effects of anti-hypertensive drugs for prolonged use, the inconvenience & the in affordability, health agencies are running towards their alternatives.

Unani system of medicine has a long list of such types of drugs that possess high efficacy & least upshots. These drugs have the properties of *latafat* (thinning of blood), *tahallul* (resolving thick & viscid humour) & *istifragh* (evacuate the undue amount of matter via micturition)^[7]. e.g. adrak (*Zingerber officinale*), hulba (*Trigonella foenumgraecum*), zafran (*Crocus sativus*), badiyan (*Foeniculum vulgare*), darchini (*Cinnamomum zeylanicum*), asrol (*Rauwolfia serpentina*), asgandh (*Withania somnifera*), zarishk (*Berberis aristata*), badranjoboya (*Mellisa officinalis*), lehsun (*Allium sativum*), rehan (*Ocimum basilicum*), ushna (*usnea longissima*), asaroon (*Asarum europium*), bisfaj (*Polypodium vulgare*), daroonje aqrabi (*Dorenicum hookeri*), zaranbad (*Eclipta prostrata*), sumbulluttib (*vallerenia jatamansi*), faranjmushk (*Ocimum gratissium*), sandal (*Sandalinum*), qaranfal (*Eugenia caryophyllata*), etc.^[22, 23]. These drugs were extensively used by our Unani physicians, so undoubtedly they are efficacious in the treatment & control of hypertension.

Conclusion

Hypertension becoming a major public health problem day by day. It burdens the community with premature mortality & disability. Moreover, its expensive treatment along with the side-effects of drugs compels the people to be irregular with their prescriptions. Hence, alternatives to cope up with this problem are required. Unani system of medicine have full regimen to control & prevent hypertension in time. Each and every regimen of Unani system of medicine has its own gravelling effects. Even nowadays WHO, itself accenting on diet control for better prevention of hypertension which is more or less same as described by Unani physicians under *Ilaj bil ghiza*.

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