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Concept of *Akhlat Arba* (four humors) with relation to health and disease

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Abstract

The concept of *Akhlat Arba* (four humors) had originated in Egyptian system of Medicine or Mesopotamia, although it was not systemized till ancient Greek System came around 400 BC. Especially Hippocrates (BC 460-370) is credited for its application in medicine and he also elaborated comprehensively. He finally proposed *Arkan* based theory of the Four *Akhlat* (Humors) these are *Dam* (blood), *Balgham* (phlegm), *Safra* and *Sauda*. Since then this theory is the key of Unani system of medicine.

Basically, the human body is filled up with four basic essences *i.e.* *Akhlat*. These are the dietary sources for the organs to perform their functions properly. Almost all diseases and anomalies resulted because of quantitative or qualitative disharmony of these *Akhlat*. An adequate balance blending of these *Akhlat* (humors) yields good health.

Keywords: *Akhlat Arba*; Humors; *Akhlat Ghair Saleha*; Unani Medicine.

1. Introduction

Before Hippocrates (BC 460-370), the Unani system of medicine (USM) had adopted different knowledge and concepts from the preceding ancient civilizations^[1]. USM is based on the concept of *Akhlat Arba*; firstly introduced by Hippocrates^[2], in context of human physiology. It is said that harmony and sympathy *i.e.* digestion and metabolism (*Hazm wa Istehala*) of *Akhlat* is necessary to retain wellness^[3]; and harmony of these humors is necessary for health^[4]. Disharmony in these *Akhlat* (humors) leads to different types of abnormalities that will be in characteristic patterns^[1, 5, 6].

Jalinoos (Galen) said that all the animal and plants that are subjected to genesis and degradation and those bodies that are formed inside earth *i.e.* mineral all are made from *Arkan Arba*; *Nar* (fire), *Maa* (water), *Hawa* (air) and *Arz* (earth) and these are primary remote *Arkan* and secondary proximate *Arkan* from which human body and all other blood containing are made, are *Akhlat Arba i.e.* *Dam* (blood), *Safra* (yellow bile), *Sauda* (black bile) and *Balgham* (phlegm)^[7]. From above discussion Galen validated and made more comprehensive the concept of the *Akhlat*^[8]. After that renowned Unani philosophers and physicians like Abu Sahal Masihi, Ibn Sina (Avicenna), Ahmad Bin Tabri, Ibn Hubel Baghdadi, Ibn Rushd (Averroes) and Razi (Razes) etc followed this concept.

2. *Akhlat Arba* (The Four Humors)

Khilt means the substance which is in mixture form^[2] *Khilt* is a liquid substance and made up of *Istehal Awwal* (first metabolism) of food in *Kabid* (liver)^[9-11]. Human body is buildup of *Akhlat Arba*^[12]. *Khilt* is a liquid body which is enclosed in the vessels and cavity of the body^[13] to provide *Badal Ma Tahallul* through conversion into *Jauhar Aza*^[11, 14]. They provides nutrition to the *Aza* which have same *Mizaj* as of *Akhlat*^[12, 15]. *Dam* carries the *Hararat Gharizia* (innate energy) from *Qalb* (heart) to *Aza* (organs)^[16]. Harmony of *Khilt* may be altered by specific *Mizaj*, in different phase age and seasons, residences and different diets etc. For instances according to age, more production of *Safra* in young, *Dam* in children, *Sauda* in elder people and *Balgham* in elderly persons^[13].

2.1 Mechanism of Formation of *Akhlat*

These are formed in the *Jigar* (liver) through long processes that is, first of all digestion starts from mouth and passes to the stomach where *Hrarat Gharizia* acts upon food stuff and converts into *Kailus* (liquid substance, *Hazm Awwal*) after that *Ajzae Latifa* (diluted substances)

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absorbs from stomach and intestine through *Uroq Masarika* (mesenteric vein) [17] and enters into the porta hepatis. In liver complete *Nuzj* occurs (*hazm sani*) and *Akhlat* as a blood are formed properly [13]. After formation precipitated substance that is *Sauda* and at surface is *Safra* [13] instead of *Dam* and *Balgham* are blending properly and reach to right atrium in the form of *Dam* and provides nutrition to the *Aza* (organs) [9, 10, 14, 15]. The waste products of primary digestion in stomach are eliminated through intestines. Waste of second digestion which occurs in liver eliminated mostly through urine but small quantity is disposed towards gall bladder and spleen and waste of third and fourth *Hazam* are eliminated through small pores of body in the form of sweating, secretion of ear and nose [18, 19].

2.2 Types and Characteristics of *Akhlat*

There are four types of *Akhlat* present in human body, and each *Khilt* has its own characteristics according to its *Mizaj* (temperament).

Name of <i>Khilt</i>	Characteristics	References
<i>Tabai Dam</i> (Sanguineous Humor)	Red in color, without any unpleasant odor, Sweet in taste, Brightness is Homogenous	[10, 15, 18, 20]
<i>Tabai Balgham</i> (Phlegm)	White transparent, moderate viscosity tasteless.	[13, 15]
<i>Tabai Safra</i> (Yellow Bile)	Reddish yellow, bitter taste.	[13, 15]
<i>Tabai Sauda</i> (Black Bile)	Reddish black, sour and astringent in taste.	[13, 15]

Mizaj of *Khilt*

Name of <i>Khilt</i>	<i>Mizaj</i>	References
<i>Dam</i>	<i>Har Ratab</i>	[10, 13, 15, 20, 21]
<i>Balgham</i>	<i>Barid Ratab</i>	[10, 13, 15, 20, 21]
<i>Safra</i>	<i>Har Yabis</i>	[10, 13, 15, 20, 21]
<i>Sauda</i>	<i>Barid Yabis</i>	[10, 13, 15, 20, 21]

3. Utilities of *Akhlat*

Akhlat are used for nutrition of *Aza*, *Aza-e-Harrah* (organs with hot temperament) like *Qalb* (Heart), *Kabid* (Liver), *Riya* (Lungs) receives their nutrition from *Dam wa Safra*, while *Barid Aza* (organs with cold temperament) like *Dimagh* (Brain) and *Tihal* (Spleen) from *Balgham wa Sauda* [2]. Especially *Safra wa Dam* provides nutrition to the lungs, [10, 13, 20] as well as *Sauda* to the bones and *Balgham* to the brain etc [15, 20]. Other utilities of each *khilt* are discussed below:

3.1 Utilities of *Khilte Dam*

Dam is the most abundant *khilt* of body it performs various functions like

- Provide nutrition to the body [20].
- Replenishes the tears [20].
- Keep the body warm [20].
- Distributes the *Hararat-e-Gharizia* [16].
- Prevent the hazard of coldness [20].
- Maintain the viscera warm [20].
- Provide the beauty and luster to the skin [20].
- Generates pneuma from its diluted part [20].
- Its *Mizaj* is suitable for life [20].

3.2 Utilities of *Khilte Balgham*

White fluid of body which comes under heading of *Khilt Balgham* performs following functions

- Maintenance of moisture in the organs and joints [4, 10, 13, 15, 16, 20].
- It nourishes the brain [4].
- When required it can be used as a *Khilt Dam* after processing by *Hararat Gharizia* (Innate Energy) [10, 13, 14, 16, 20].

3.3 Utilities of *Khilte Safra*

Safra is Reddish yellow and bitter taste part of *Akhlat*, used in following manner by body

- Helps the blood to flow through the small vessels and capillaries easily [10, 13, 20].
- Some part of *Safra* goes to the gall bladder and other into the blood [14].
- *Marara* (gall bladder) receives *Taghzia* (nutrition) from *Safra* [10, 13, 20].
- It is helpful in digestion of food [10, 13, 20].
- *Safra* acts as a detergent into the intestine [10, 13, 20]. It washes the viscous secretion from small intestine [22].
- It provides stimulation for defecation [13, 20].

3.4 Utilities of *Khilte Sauda*

The black colored portion of *Akhlat* i.e. *Sauda* have following utilities:

- After complete formation it goes to the blood stream and spleen [14].
- It provides strength to the bone [10, 20].
- It makes the blood viscous [10, 20].
- Provides nutrition to *Tehal* (spleen) [13].
- Acts as appetizer [10, 13, 16, 20].

4. Disharmony and correction

Health and disease depend upon harmony of these *Akhlat Arba* [2]. Unani philosophers describe the meaning of disharmony that, it is any change in quality and quantity of *Akhlat* [11]. Disharmony in quantity is called as *Imtala Ba Hasbul Auhia* while disharmony of quality is known as *Imtala Ba Hasbul Quwa* [9].

a. *Imtala Ba Hasbul Auhia*

It is due to increase in *Kammiyat* (quantity) of *Akhlat* [9]. Presentation is reddish skin, laziness, hyperemic vessels, sleepiness, yawning, fatigueness, headache and hyper pulsation etc [21]. Ibn Sina says that if there is excess accumulation of *Akhlat Ghair Saleha* in *Uruq Damwiah wa Tajawif* (blood vessels and cavity) it may result in obstruction [23]. This condition in general is managed by *Fasd* (Venesection) [13] and *Taqleel Ghiza* (diet restriction) [24].

b. *Imtala Ba Hasbul Quwa*

The disharmony in *Kaifiyat* (quality) of *Akhlat* is called as *Imtala Ba Hasbul Quwa* [9]. This presentation is susceptible for infectious diseases [20], decreased appetite, there are changes in pulse and urine [21]. The Management of above said condition is to reduce use of *Makul wa Mashrub* (food and drinks), and observing bloodletting at regular intervals [17]. It is written in classical text that a person with *Imtala Ba Hasbul Quwa* should eliminate *Akhlat Fuzuliah* (morbid humor) before starting of *Mausam-e-Rabi* (spring season) [24].

This disharmony of *Akhlat* either in quantity or quality or both represents in different manner, each *Khilt* had its particular symptoms, related diseases, and different management as discussed below:

4.1 Disharmony of *Khilt-e-Dam*

a. Symptoms

Patients of disharmony of *Khilt-e-Dam* complain of fatigueness, excess yawning, and feeling of sweetness in mouth along with heaviness in eyes, and at mastoid region ^[10].

b. Diseases

Nafsuddam (Hemoptysis), *Qaiuddam* (Hematemesis), *Nakseer* (Epistaxis), *Hummae Tifudia* (Typhoid fever), *Khuraj* (Abscesses), *Waram Har*, *Damamil* (Rashes), *Dubailah* (Large Abscess) and reddish urine etc. ^[21], *Tap-e-Matbaqah* (Type of fever), *Shaqiqa* (Migraine) and *Dawali* (Varicose vein) ^[19].

c. Management

Regarding management of disease related to disharmony of *khilt Dam* blood-letting in small amount is recommended, patient are also advised not to take sweet diet in excess ^[10, 17, 21].

4.2 Disharmony of *Khilt-e-Balgham*

a. Symptoms

Whitish colored skin, soft pulsation, cold tactile, decreased thirst, sleepiness and laziness, excessive salivation ^[10], delayed digestion ^[21], *Nisyan* (forgetfulness) ^[25], Drowsiness ^[2].

b. Diseases

Excess of *Balgham* develops *Barid Amraz Amraz* ^[13] i.e. *Falij* (paralysis), *Saktah* (apoplexy), *Laqwah* (Facial palsy), *Nisyan* (Forgetfulness) and *Hummae Balghami* (phlegmatic fever) ^[21]. *Lisarghus* (type of meningitis) ^[25], *Rasha* (tremor), *Tashannuj* (Convulsions) ^[26], *Dawar* (vertigo), *Sadar* (Giddiness), *Kabus* (night mare), *Sara* (epilepsy), *Khidr* (paresthesia), *Warm-e-Sulb wa Layyan* (Type of Inflammation), *Tahabbuj* (Edema) ^[19].

c. Management

Istifragh Balgham (elimination of *Balgham*), *Tadbeer Mosakhinah* (Hot Contrivances), use of hot temperament food, and low intake of water and food is advised, *Riyazat* (Exercise), *Dalk* (Massage) and Sun bath are also indicated ^[25].

4.3 Disharmony of *Khilt-e-Safra*

a. Symptoms

Pale color skin, dryness and bitterness in mouth, nausea ^[10, 21], decreased appetite ^[2] bilious vomiting, loose motions, burning micturation, tachycardia, ^[10, 21], increased thirst, fiery dreams and feeling of nibbling and laziness ^[2].

b. Diseases

Safra is cause for *Har Amraz* i.e. *Hummae Safrawia* (bilious fever), *Hummiyate Haddah* (acute fever) ^[19], *Barsam Har*, Gangrenous pustules, *Yarqan* (Jaundice), *Warme Kabid* (hepatitis), *Qarha* (ulcer) of urinary bladder and intestine, *Faranitus* (type of meningitis) ^[25].

c. Management

Disease related to *Khilt-e-Safra* are managed by use of *Mushilat Safra Advia* (purgative), *Tadabeer Mubarridah* (cold regimen) and *Morattibah* (wet regimen), along with a

restriction in salt intake ^[13].

4.4 Disharmony of *Khilt-e-Sauda*

a. Symptoms

Yellowish brown to black colored skin, dryness, increase appetite, anxiousness, sadness, reddish black urine, excess growth of hair on body ^[10, 21] along with pain at spleen ^[10, 17, 21] sleeplessness and dreams of black objects ^[2].

b. Diseases

Melancholia ^[25], *Juzam* (leprosy) ^[19], *Sartan* (cancer) ^[11], *Dawali* (varicose vein), *Da ul Fil* (elephantiasis), *Hummiyat Raba* (Type of fevers) ^[10, 17, 21] are common disease condition related to *Khilt Sauda* despite of above said disease *Sue Hazm* (indigestion) ^[27] and *Sahr* (insomnia) are also noticed in disharmony of *Sauda* ^[19].

c. Management

In the management of disease related to *Khilt-e-Sauda* ancient unani scholars had advised *Istifragh* (elimination) *Sauda* as key to manage its disharmony, vomiting before meal ^[25], along with avoidance of *Ghiza-e-Barid* is recommended, the patients of this disease condition also advised to take *Hammam* before *Ghiza* and to observe an abstinence from *Jima* (coitus). Ancient unani scholars had also recommended *Muqawwiyat-e-Qalb wa Dimagh Advia* (Cardiac and brain tonic) to be used along with other drugs for better results ^[19].

5. Conclusion

With above discussion it may be concluded that *Akhlat* are the liquid part of human body, and a balance between all of four *Akhlat* is necessary for health and wellbeing of humans, if any disproportion in quantity or quality of *Akhlat* disease is inevitable, ancient Unani philosophers had elaborately discussed the cause of this disharmony, sign and symptoms of disease and management through various *tadabeer* (Regimen) and drugs. This concept of Unani philosophers, with a great success had been practiced by followers of unani medicine, throughout the globe for the betterment of humanity; this again revalidates Hippocrates humoral theory. Future research for the better understanding and scientific validation of Humors and humoral theory are needed.

6. Conflict of Interest

Authors claim no conflict of interest.

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