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Review Article

Humma-e-Yaum (Ephemeral Fever): A Unique Concept of Humma (Fever) in the Unani System of Medicine

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Abstract

Fever also referred to as pyrexia, is defined as having a temperature above the normal range due to an increase in the body's temperature set point. It is known as 'Tapp' and 'Bukhar' in Persian and the common Indian language respectively. Fever is perhaps the oldest known medical condition. Fever being easily detectable by the patients, led them to approach a suitable cure by themselves or by physicians to bring down the temperature to normal. The ancient physicians were aware of the role of febrile diseases as a cause of death. However, in early Greek writings fever was not differentiated as to whether it was a sign or a symptom. Similarly, there was early confusion about the difference between a sign or symptom of fever and fever sickness, and little attention was paid to the true definition. Ancient physicians like Hippocrates and Galen have described fever in their writings. Avicenna and Rhazes described various types of fever based on the derangement in pneuma and humours etc. of the body known as Humma-e-Yaum (Ephemeral fever) or one-day fever and Humma-e-Khiltia (Humoural fever) respectively. In this paper, an attempt is made to explain the Humma-e-Yaum (Ephemeral fever) and its types as mentioned in the Unani System of Medicine. Relevant literary material was collected from the Unani books like Hummiyat-e-Qanoon, Al-Qanoon fit Tibb, Ikseere Azam, Kulliyate Nafeesi. The Unani classical literature books were reviewed manually. The authors also searched for various relevant journals from Google scholar, PubMed etc.

Keywords: Humma; Humma-e-Yaum; Fever; Unani Medicine

Introduction

Fever has garnered the greatest attention among the many symptoms and indicators of disease throughout medical history. Fever and pain are the most common symptoms of any ailment that prompt a patient to seek medical attention. The history of fever may be traced back to the dawn of civilization. Although in the earliest civilizations fever was considered a sign of retribution, a manifestation of malevolent spirits, or a sign of death. The earliest documentation of fever is found in Edwin Smith's papyrus, where local inflammation was distinguished from general fever, with the latter usually implying a high temperature [1]. Hippocrates (5^{th}–4^{th} century BC) is considered the father of medicine as he rejected the

supernatural theory of disease causation. He proposed the theory of four humours to understand the state of the human body i.e., health and disease. He considered febrile diseases as an excess of animal heat involving the whole body. He dedicated himself to the clinical observation of involved subjects and began to characterise the different types of fever [2]. Hippocrates was aware of the usual paroxysmal fever patterns that occurred in malaria, such as tertian (every 48 hours) and quartan (every 72 hours) [3]. Celsus (first century CE) cautions of fever mostly in qualitative terms as he mentioned "A woman after childbirth is in danger of death if also oppressed by violent and persistent pain in the head along with fever" [4]. Galen of Pergamon (2 century CE) who was a follower of Hippocrates as reflected in his writings, considered fever as a systemic disease. He described fever as a 'primary dyscrasia related to an excess of heat' [5]. Long before to Galen, Herophilus (335–280 BCE) explored fever in a new dimension and he believed raised temperature or fever is somehow linked with a shift in pulse rate. Herophilus even devised a water clock to record the change in pulse with fever (adjusted for patient age). Although the exact mechanism of that equipment is not known, surely it was the very first attempt to quantify fever [6].

As far as the approach of Arab and Persian physicians towards fever is concerned they followed Hippocrates and considered fever as excess heat that produces in the heart and spreads throughout the body [7]. Renowned Persian Physician Al-Razi criticized the views of Galen on the progression of fevers, as he personally encountered cases that did not conform to Galen's patterns. Avicenna described the four stages of fever (the commencement, increasing fever, plateau, and decrease), much like thermophysiologists do today [8]. For a better understanding of the concept of fever according to Greco-Arab physicians, one must be aware of their concepts of Hararat-e-Ghariziyah (Innate heat) and Arwah/Ruh (Pneuma).

Hararat-e-Ghariziyah (Innate heat) and Hararat-e-Ghariba (morbid heat)

According to the Philosophy of Greco-Arab medicine, a certain level of heat in the body is necessary for the sustenance of life which is known as innate heat. This heat is neither so high that it burns the body nor so low that it is insufficient for any change to occur in the body.

The heart is the source of innate heat [7]. It traverses through arteries from the heart to numerous body organs [7]. Tabiyat (Physis) the supreme planner of the body, uses innate heat as a tool to regulate and accomplish its functions [9]. Innate heat is the organism's basic, primal type of thermal energy, which fuels various bodily mechanisms like digestion and metabolism etc.

Galen opined that innate heat is the heat of the fire (element) which is one of the constituents of the body. Rhazes followed the Galen by considering it the heat of the fire (elment). However, Avicenna differs from them and ponders it being a type of celestial heat that is bestowed to zygotes by God at the time of fertilization [8]. One thing must be very clear that the views of physicians only differ in the inception or origin of innate heat but not in its functions.

To be used as a tool of Tabiyat for various body functions innate heat must be within its normal limits or equilibrium, once it surpasses the normal limit is known as Hararat-e-Ghariba (morbid heat).

Ruh/Arwah(pneuma)

Ruh is one of the seven fundamental factors necessary for the existence of the human body. The heart is considered a site of production of Ruh where it is formed by the contribution of light humours and inspired air. Ruh reaches all organs of the body through the vessels. Ruh provides heat to all organs, allowing them to function properly. Because of its thinness and hotness, ruh gets dissolute easily. A continuous supply of inspired air helps to maintain its very nature by not allowing Ruh to become extremely hot (extreme hotness of Ruh is not suitable for life). This process is known as Tarweeh. It is a fact that the hotness of Ruh increases with its movement [10].

Fever

Fever is the Hararat-e-Ghariba (morbid heat) that rises from the heart spreads all over the body and warms the whole body [7].

Fever also referred to as pyrexia, is defined as having a temperature above the normal range due to an increase in the body's temperature set point [2].

Fever is abnormal (high) body heat. It is a type of alien heat that flares up in the heart and spread throughout the body via blood vessels causing impairment of body functions [11].

Classification of fever

Various types of fever are described by Greco-Arab physicians. Broadly, fever is classified into three main categories based on the involvement of pneuma, humours and Aza-e-Aslia/cells as follows [11]:

- Humm-e-Yaum (Ephemeral fever OR day-to-day fever),
- Humma-e-Ufuniya (Humoural fever), and
- Humma-e-Diq (Hectic Fever).

Humm-e-Yaum

In this type of fever, the Ruh gets affected by the Asbab-e-Badiya (external causes) resulting in fever. Asbab-e-Badiya (external causes) are non-corporeal (outside the body) causes which produce corporeal states directly e.g. blow, atmospheric heat, hot or cold food or psychological factors like anger or fear [11]. This heat does not persist for a longer duration (usually not more than one day and/or night), hence the term Humma-e-Yaum (one-day fever).

In the Unani classical literature, there are nearly 23 types of Humma-e-Yaum described. This fever usually lasts a day, but it can last up to three days. However, if it lasts more than three days, it is not considered Humma-e-Yaum anymore [8].

Humma-e-Khiltiya (Humoural fever)

This type of fever is caused by derangements in humours. Since humours flow in vessels to reach the organs. When abnormally hot humour reaches the heart, it may produce morbid heat resulting in fever. Sometimes, the presence of abnormal hot humours even in an organ may produce morbid heat and results in fever [8].

Humma-e-Diq (Hectic fever)

In this type of fever, morbid heat involves the Aza-e-Aslia or cells and results in the dissolution of Ratubat-e-Aslia [8].

Many Unani physicians described three stages of this fever.

According to Ibn Sina 1. Diq : In this stage, Hararat-e-Ghariba disssolutes the Ratubat-e-Urooq intervascular fluid completely [8].

2. Zabool:

In this stage, Hararat-e-Ghariba disssolutes the Ratubat-e-Taliya [8].

3. Mufattit:

In this stage, Ratubat-e-Asliya, Ratubat-e-Ustuqqusia and Jauhariya dissolutes completely from Hararat-e-Ghariba [8].

According to Abu Sahl Masihi, in the initial stage morbid heat makes the Ratubat-e-Aslia hot, then start its dissolution in the second stage followed by its complete dissolution in the third stage of this fever [12].

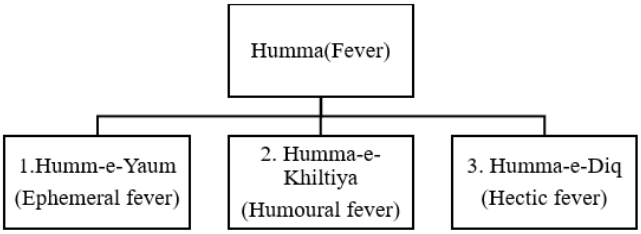

Figure 1: Classification of Humma-e-Yaum [8].

Types of Humma-e-Yaum [8,13]

S. NO.	Name of *Humma-e-Yaum* (Ephemeral fever)	Causes
1	*Humma Ghamiya* (Sad ephemeral fever)	Extreme Sorrow
2	*Humma Hamiya* (Apprehension fever)	Anxiety
3	*Humma Faziya* (Fright ephemeral fever)	Fear
4	*Humma Fikriya* (Anxiety ephemeral fever)	Stress
5	*Humma Gazabiya* (Anger ephemeral fever)	Anger
6	*Humma Farhiya* (Joy ephemeral fever)	Happiness
7	*Humma Sahariya* (Insomnious ephemeral fever)	Insomnia
8	*Humma Naumiya* (Sleeping ephemeral fever)	Excess Sleep
9	*Humma Taabiya* (Fatigue ephemeral fever)	Fatigue
10	*Humma Ishaliya* (Diarrhoeal ephemeral fever)	Loose motions
11	*Humma Wajiya* (Pain ephemeral fever)	Pain

12	*Humma Gashsiya* (Syncope ephemeral fever)	Syncope
13	*Humma Jueiya* (Hunger ephemeral fever)	Hunger
14	*Humma Suddiya* (Ephemeral fever due to occlusion of blood vessels)	Obstruction
15	*Humma Atashiya* (Thirst ephemeral fever)	Excess thirst
16	*Humma Tukhmiya* (Dyspeptic ephemeral fever)	Indigestion
17	*Humma Waramiya* (Inflammatory ephemeral fever)	Inflammation
18	*Humma Shamsiya* (Ephemeral fever due to heatstroke)	Exposure to excess Sunlight
19	*Humma Istahsafiya* (Fever due to closure of the skin pores)	Closure of skin pores
20	*Humma Sharabiya* (Intoxicating ephemeral fever)	Excess consumption of Alcohol
21	*Humma Qashfiya*	Skipping of bath
22	*Humma Ghizaiya* (Dietetic ephemeral fever)	Excess Diet
23	*Humma Istifraghiya* (Evacuatory fever)	Excess Evacuation

Table 1

- **Humma Ghamiya:** According to the philosophy of the Unani Medicine after sadness/grief causes the movement of Ruh towards the core of the body. In prolonged sadness, Ruh continues to be in the core of the body leading to its suffocation. Hence, Tarweeh of Ruh becomes difficult or inefficient causing increased hotness in Ruh. This elevated hotness manifests itself throughout the body as a fever [14].
- **Humma Hamiya:** "Ham" refers to worries [15]. Unani physicians believed that excessive worry causes frequent movement of the Ruh (pneuma) resulting in its increased hotness thereby causing fever [14].
- **Humma Faziya:** "Faza" refers to fear [15]. This fever is like Humma-Ghamiya, with the exception that the movement of Ruh towards the body's core is more intense. The second distinction is that grief's consequences are gradual. The repercussions of fear, on the other hand, are immediate [14].
- **Humma Fikriya:** It is similar to Humma Hamiya but less in severity [14].
- **Humma Gazabiya:** In fury and rage, sudden frequent movements of Ruh to the outer of side the body occurs, causing its increased hotness. This hotness of Ruh spreads throughout the body causing fever [14].
- **Humma Farhiya:** Sometimes, extreme joy and happiness cause fever by the anxious movements of Ruh [14].
- **Humma Sahariya:** Excessive wakefulness increases body heat just like exercise does. It is a fact that heat is produced due to Harkat (motion). Every bodily and psychic movement produces heat. Some bodily and psychic movements continue to occur when a person is awake. Excessive wakefulness leads to fever due to the overproduction of heat in the body [14].
- **Humma Naumiya:** This type of transient fever occurs due to prolonged sleep. The hot vapours of Ruh do not dissolute in sleep that dissolute during wakefulness as a normal process. So, during prolonged sleep, sometimes fever may occur due to these hot vapours [14].
- **Humma Taabiya:** Excessive physical exertion causes the overproduction of heat in the body. This heat increases the hotness of Ruh thereby causing fever [14].
- **Humma Ishaliya:** A type of fever that occurs due to excessive purgation. Sometimes, Ishal causes anxious movements in humours as well as in Ruh leading to fever. At times, purgatives given to the patient, are of hot temperament. So, they increase the hotness of the body [14].
- **Humma Wajiya:** A type of transient fever that occurs due to excessive pain as pain causes frequent movements of Ruh towards the site of pain leading to its increased hotness that sometimes results in fever [14].
- **Humma Gashsiya:** A type of transient fever that occurs due to syncope. As a protective response to syncope, anxious movements of Ruh occur that make ruh very hot and cause fever [14].
- **Humma Jueiya:** During intense hunger innate heat of the body does not get any food to act upon so it starts acting on the humours of the body. Consequently, vapours are formed that make Ruh hot and opaque leading to fever [14].

- **Humma Suddiya:** A type of transient fever that occurs due to obstruction of blood vessels. That leads to less dissolution of matter and retention of vapours inside the lumen. Circulation of blood and pneuma gets disturbed leading to the hotness of blood and Ruh resulting in fever [16].

This is the only type of transient fever that can last up to three days and can transform into Humma 'Ufuni' i.e., infectious fever. The temperature in this type is higher than any other fever [14].

- **Humma Atashiya:** The intensity of thirst leads to the formation of vapours that are much hotter than those that are formed during intense hunger. These vapours make pneuma hot thereby causing fever [16].
- **Humma Tukhmiya:** A type of transient fever that occurs due to dyspepsia and indigestion. In this type of fever, there is the production of bad vapours that causes the hotness of Ruh. Individuals with the stomach of hot temperament are prone to this fever [14].
- **Humma Waramiya:** A type of fever that results due to ulcers, wounds, injuries, boils, abscesses etc.
- **Humma Shamsiya:** A type of transient fever that results from long exposure to the sunlight which leads to increased hotness of Ruh [8]. Sometimes, overexposure to sunlight leads to sunburn of the skin. This leads to the closure of skin pores causing the accumulation of hot vapours and excessive hotness of Ruh in the body [16].
- **Humma Istahsafiya:** This type of fever occurs due to constriction and closure of skin pores that leads to retention of hot vapours in the body instead of their dispersion. This fever occurs when a person takes bath with cold water, or with water that has some astringent e.g., alum mixed in them [14].
- **Humma Sharabiya:** A type of transient fever that occurs due to the over-intake of sharab/alcohol. In Unani medicine, sharab is considered of hot temperament. Its hotness affects the Ruh and results in fever. In this condition eyes and face become congested, and there will be burning at the site of the liver [14].
- **Humma Qashfiya:** A type of transient fever that occurs due to the closure of skin pores by dirt and dust as occurs in abstinence from bathing. Closure of pores prevents dissolution of hot vapours (waste i.e., sweat) resulting in fever [14].
- **Humma Ghizaiya:** A type of fever that occurs due to the over-intake of hot diets [14].
- **Humma Istifraghiya:** Sometimes due to Ishal (diarrhoea) circulation of akhlat/humours gets disturbed which causes frequent movement of Ruh resulting in fever. The use of Mushil (purgative) drugs sometimes raise the body temperature as most of them are of hot temperament. Fasd (venesection) also causes this fever as fasd makes vapours safravi and dukhani in nature. Fasd causes a decrease in the moistness of vapours and blood in the body that leads to increased hotness of vapours and blood resulting in fever [8,14].

Discussion and Conclusion

The description of the whole set of Humma-e-Yaum in USM is exceptional and recent studies have proved the existence of different types of Humma-e-Yaum. For example, Kassem Sharif and Abdulla Watad., *et al*. mentioned fatigue fever (Hummae Taabiya) as chronic fatigue syndrome [17]. The book the Treatise of Fevers, titled "Treatise on the ephemeral fever that derives from reasons of sorrow" describes sadness as one of the causes of fever which is described as Humma Ghamiya in the Unani System of Medicine [18]. Yoshiko Nakamura1 and Kazuhiro Nakamura mentioned the mechanism of Hummae Jeuiya, in their article that recent studies have revealed that during hunger, a GABAergic group of neurons in the IRt/PCRt of the medulla oblongata takes the control of the two independent (sympathetic and somatic) motor systems to simultaneously command the inhibition of adaptive BAT thermogenesis (energy saving) and the promotion of food [19]. Rhonda F. Brown, Einar B. Thorsteinsson., *et al.* have proved the mechanism of how insomnia/sleep impairment is related to an increase in body temperature (core body temperature) proving the extent of Hummae Sahariya [20]. The role of cytokines has to be taken into consideration as well (Lee, 1991; Kosaka and Okumura, 1999), because fever may be an aggravating factor in heat stroke (Hummae Shamsiya) conditions as mentioned by M. Kosakaa, M.

Yamane., *et al*. J. Adriaan Bouwknechta, b, Berend Olivier., *et al.* in their article mentioned the function, brain mechanisms and pharmacology of stress-induced hyperthermia (SIH) in a broad context [21]. Hyperthermia itself is induced by all stressful stimuli (Hummae Fikriya) and can be found across numerous species, including humans. WESTENRA S and MBON, wrote in one of his articles that, in recent works, there are two distinct conditions-heat exhaustion and thermic fever-classed together under the common title of "heat stroke", and most writers describe heat exhaustion as an initial stage of thermic fever [21].

It is inferred that over the centuries, the ancient Greeks, Romans, and Persians all contributed to our understanding of fevers. There existed a workable definition, an intricate classification structure, hypotheses for the aetiology, and methods for diagnosing and treating fevers. Further studies should be done to establish the link between febrile response and the above-mentioned causes listed in the table.

Figure 2: Depicting the causes/pathology of ephemeral fever.

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Conflicts of Interest

There are no conflicts of interest.

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