



CONCEPT OF COVID-19 IN UNANI SYSTEM OF MEDICINE AND ITS BASIC PRINCIPLES OF MANAGEMENT

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ABSTRACT

The World Health Organization (WHO) declared COVID-19 as a six public-health emergency of international concern. It is a viral disease due to the Severe Acute Respiratory Syndrome Corona virus 2 (SARS-CoV-2) viruses. Corona virus can affect all the people but older age, immune-compromised and people with chronic illnesses like Diabetes and CAD are more susceptible. Unani scholars like Hippocrates, Galen, Rhazes, and Avicenna had described the etiological factors for epidemic diseases (*amraz-e-waba*) and gives various preventive measures as well as prophylactic treatment accordingly. As we know that Unani system of Medicine lays great emphasis on the prevention of disease and promotion of existing health through the Physis of human body (*Tabiat*) and principles of six essential factors (*Asbab-e-Sitta Zarooriyah*) of life. This review aims to understand how the immune system is reacting to fight the corona virus and focuses and elaborates on the concept, prevention, and probable management of COVID-19.

KEYWORDS: *Corona virus, Asbab sitta Zarooriyah, epidemic disease, Unani medicine, Tabiat.*

INTRODUCTION

The science of the Unani system of medicine (USM) is based on Hippocratic theory of four humours: sanguine, phlegm, yellow bile, and black bile. Any disruption in the equilibrium of humors (*Akhlat* NUMC Code: O-2.3) causes disease and thus the treatment seeks to restore balance by employing measures that counteract the deranged humours and temperament (*Mizaj* NUMC: O-2.2), etc. Furthermore, the Unani system of medicine also believes that *medicatrix-naturae* (*Quwat-e-mudabbir-e-Badan* NUMC: O-1) is the supreme force that regulates all the functions of the body and acts against the diseases. Ibn-e-Sina stated that *Tabi'at* has the capacity that resists the disease and makes a defensive line against the pathogen until it overcomes the disease^[1]. Ibn Sina stated that sometimes the *ajsām khabītha* (pathogenic organisms) contaminates the water which may ultimately change the quality of air and causes fever in a large group of the population at a very short period. In this regard Avicenna also stated that Ibn-e-Sina (980–1035 CE) stated that epidemics spread from one person to another, and one city to another 'like a message'^[2] COVID-19 is an infectious disease caused by the newly discovered novel corona virus. There is no direct description in Unani system of medicine about corona virus in general and in particular corona virus disease 2019 (COVID-19), but the clinical features of

COVID-19 resemble with those of *Nazla-e-Wabaiya*, a type of *Amraz-e-Waba* (epidemic disease). The term epidemics and pandemics are not defined separately by Unani scholars and a common word 'waba' is used for those diseases that affect a wide geographical region.^[3]

The mild symptoms of COVID-19 are fever, tiredness, and dry cough, may have aches and pains, nasal congestion, runny nose, sore throat and the serious illness includes difficulty in breathing. There are several COVID-19 vaccines validated for use by WHO. The first mass vaccination programme started in early December 2020. WHO is working tirelessly with partners to develop, manufacture and deploy safe and effective vaccines. Being vaccinated does not mean that we can throw caution to the wind and put ourselves and others at risk, particularly because research is still ongoing into how much vaccines protect not only against disease but also against infection and transmission. The general measures like isolation, social distancing, and routine use of masks and regular washing of hands, ensuring good ventilation indoors must be continued.

METHODOLOGY

The concept of epidemic diseases (*Amraz-e-Waba*) has been surveyed from literature of Unani books, contemporary text, indexed articles, WHO reports and

Internet such as PubMed, Medline, Scopus, Science Direct, Google Scholar, etc.

CONCEPT OF EPIDEMIC DISEASE (*Amraz-e-Waba*)

In Unani system of medicine, “Decreased Immunity Disorders” was documented by most of the physicians. The most emphasis was given on “TABIYAT”(a real healer), which is also called “Medicatrix Naturae” (Quwwat Mudabbira Badan). Tabi’at is basically supreme power (sayyad-ul-quwa) of the body which includes all faculties/power like vital faculties (*Quwā Haywāniyya* NUMC: O-2.6.3), natural faculties (*Quwā Tabī’iyya* NUMC: O-2.6.1) and mental faculties (*Quwā Nafsāniyya* NUMC: O-2.6.2). When due to some reason the tabi’at becomes weak, as seen in the diseased condition and during the old ages, there is no type of behavior or medication could be effective. If the Tabiyat is strong enough and has not succumbed to the infection, a good and healthy sign is seen and that is the production of specific humours (immunoglobulins) against the microorganisms to get rid of the infection. The exact term is not mentioned for Amraz-e-waba in Unani literature but it can be explained under the heading of Humma-e-Wabaiya. The symptoms found in humma-e-wabaiya are much similar to the Covid-19 symptoms.^[4] Wabai amraz occur due to the changes in the substance of atmospheric air. These are seasonal or occur annually due the changes in the temperament of the air. When air deviates from its normal composition it causes certain types of diseases in humans. Unani medicine attributes infectious disease as the pathogen’s success to the vulnerability of the organism to infection (host factors) due to humoral imbalance or dystemperament. There are three sets of causes in Unani medicine: (i) bodily predisposition – humoral, temperamental or structural; (ii) external causes that are mainly environmental, and (iii) bodily relation causes that are necessary to induce change arising from the interaction of the first two sets. Avicenna in canon of medicine described that the changes that occur in the air are similar to those of which occur in water, which is why the quality of the air changes to hot or cold and the constituents or temperament of air changes. Due to these changes, changes in color and taste and putrefaction are produced. For example, changes in the taste and color of water occur, which develops foul smell and becomes infected. Also remember that when the water is “pure”, it is not infected until it comes in contact with infected particles (*Ajsam-e-Arziya Khabeesa*), and thus, it mixes with water and pollutes it.

Beneath the ground, infection is caused due to various factors and we are unaware of its constituents. These causes then enter air and water, polluting and infecting it. Those epidemic fevers that occur due to dry air are very less when compared to those which occur due to moist air. In dry air, the production of bile is increased and hence it becomes the cause for greater incidences of bilious fever. And epidemic fevers are produced due to

“turbid” and “moistened air”. Fevers are predominantly caused by moist air but they are less severe and are of longer duration because its substance is viscid and hence it resolves gradually.^[5, 6, 7]

PATHOGENESIS (MAHIYAT)

According to the Unani concept, infectious disease developed due to abnormal dominance of hot (*Harārat* NUMC: O-5.1.1), moist (*Rutūbat* NUMC: O-5.2.1), and microbes (*Ajsam-e-Khabitha*). In Wuhan, during winter, moist environment increased the risk of viral infection. Presently, season is changing into summer (hot) which also precipitates the spreads of microbes (e.g., viruses, bacteria, fungus). Rhazi says that, peak summer along with rainy season is one of the most common causes of epidemic diseases. This observation implies that, Unani medicine promotes the elimination of moistness (dampness) from the body during “epidemic situation” with the help of some specific regimes which promotes the lessening of moisture that inhibit the growth of microbes (viruses). Severe acute respiratory syndrome coronavirus (SARS CoV-2), a novel coronavirus from the same family and spread worldwide leads to declare a pandemic by World Health Organization.^[8] COVID-19 can be divided into three phases based on the cells likely to be infected, corresponding to the different clinical stages of the disease. Higher numbers of leukocytes, irregular breathing results, and high levels of pro-inflammatory cytokines in plasma were reported in patients diagnosed with COVID-19. The key pathogenesis of COVID-19 infection as a respiratory system that targets the virus was severe pneumonia, coupled with blindness to the ground and acute heart injury.^[9]

MODE OF TRANSMISSION OF COVID-19

SARS CoV-2 virus has a very high infectivity rate. Two modes of transmission exist i.e. direct and indirect. The direct mode includes transmission via aerosols, anal secretions, tears, saliva, semen, and mother-to-child. Indirect modes include transmission via fomites.

Airborne transmission via aerosols formation is suspected to be the main mode of transmission. Aerosols are particles under 100 µm in diameter.^[10] The Spreads of the virus primarily through contact with an infected person when they cough or sneeze. It also spreads when a person touches a surface or objects that has the virus on it, then touches their eyes, nose, or mouth.

OMICRON VARIANTS OF COVID-19: It is normal to viruses to change and evolve as they spread between people over time. When these changes become significantly different from the original virus they are known as variants. The omicron variant (variant B.1.1.529) was first reported to WHO on 24th November, 2021. The omicron variant has a large number of mutations. It means the virus acts differently from other variants that are circulating. To protect yourself and others from COVID-19 variants same preventive

measure can be applied as given by WHO and get vaccinated as soon it is your turn.^[11]

CLINICAL FEATURES OF COVID-19

The symptoms of COVID-19 may arise within 2 to 14 days after the infection (The incubation period varies from 2 to 14 day). Besides, in some cases, the diseases prevail after 27 days.

Clinical features of *Amraz-e-Waba* depend on the quality of humours, seasons, quality of air, the direction of air, physis, types of diet, habitants, ages, celestial bodies, contact of microbes (*Ajsam-e-Khabeesa*), etc. The most common symptoms are high-grade fever, dry cough and tiredness with some less common symptoms like headache, sore throat, loss of taste or smell, and bodyache etc. The serious symptoms like loss of speech or movement, respiratory problems (shortness/difficulty in breathing), loss of appetite, foul smell from breath, dry tongue, asthenia, confusion, kidney failure and even death.

DIAGNOSTIC PROCEDURES

Infection should be suspected in persons with a compatible respiratory illness and exposure history (if identified). In the early stages of disease peripheral WBC count normal or decreased and the lymphocytes count decreases. Some patients represent an increase in liver enzymes, lactate dehydrogenase (LDH), muscle enzyme and myoglobin. Mostly patients have increased C-reactive protein (CRP) and ESR. In severe and critically ill cases elevated inflammatory factors. Novel coronavirus nucleic acid can be detected in nasopharyngeal swabs (Nasopharyngeal swab is preferred; oropharyngeal swab may be submitted in addition), sputum, lower respiratory tract secretion, blood, faeces and other specimen using RT-PCR method (Reverse Transcription Polymerase Chain Reaction is lab technique use to measure the amount of specific RNA). This is achieved by monitoring the amplification reaction using fluorescence, a technique called Real Time PCR or quantitative PCR (qPCR). Rapid Antigen Test is suitable for bedside testing that directly detects the presence or absence of an antigen. In early stage, chest X-ray shows multiple small shadows and interstitial changes appear in outer lateral zone of lungs. As the disease progress, imaging then shows multiple ground glass opacities and infiltration in both lungs has shown abnormalities in most reported patients. In severe cases, pulmonary consolidation may occur. Chest CT Scan may be helpful to diagnose COVID-19 in individuals with a high clinical suspicion of infection.

PREVENTIVE MEASURES (*Tahaffuzi Tadabeer*)

India's Ministry of traditional medicine or AYUSH (Ayurveda, Unani, Siddha, Homeopathy) issued "Advisory" advocating preventive measures against the viral infection on 29 January 2020. WHO advised the population to wash their hands as many times as possible to protect against COVID-19, distancing, wearing a

mask, and issuing the preventive measure of isolation and quarantine to alleviate the spread of COVID-19. SARS patients should be kept in separate wards with intensive care. Health-care workers should be provided with fit tested N95 respirators and protective suits and goggles. Airborne transmission precautions should be taken during aerosol-generating procedures such as intubation, suction, and tracheostomies. All contacts including health-care workers should be monitored for the development of symptoms of COVID-19.^[12, 13]

Air Purification

Air purification can be carried out by the fumigation of some antiseptic drugs like Oodkham, Amber, Kundur, Mushk. Use of Sirka and Heeng has also been suggested by Unani physicians as a spray to prevent infection. The air itself is the source of distortion due to its mixing with neighboring contaminated air or an inexplicable atmospheric cause. In this case, it is better to seek shelter in houses or "quarantena" that are surrounded by walls and bedrooms. The incenses most suitable for treating distorted air are galingale (*Cyperus longus* L.), loban (*Styrax benzoin* W. G. Craib ex Hartwich.), myrtle (*Myrtus communis* L.), roses (*Rosa damascena* Mill.), and sandalwood.^[14]

Diet (*Ghiza*)

Unani medicine emphasized that diet (*ghiza*) is important supporting pillar of life which improves vitality, strength and *tabiyat* (immunity) during epidemics. Avoid meat, sweets, and fruits with high water content. If meat has to be taken, then that of birds found on mountains may be preferred over animal meat.^[15] These restrictions were placed probably because the zoonotic spread of infections.

Sour foods (*Tursh Ghiza*) are generally recommended but in less quantity. *Mukhallilat* (pickle made using *sirka*) especially "*KibrMakhP*" is very effective, and Hing (*Ferula foetida* L.) is also effective against infections.^[16]

Regimes (*Tadabeer*)

To prevent epidemics, "*Ratoobat-e-Fazila*" (morbid humours) from the body should be expelled through *Qai* (vomiting) and *Ishal* (purgation with the help of *Cassia angustifolia* L.) and *Fasd* (venesection) and other essential regimens of *Asbab-e-Sittah Zaruriyah* (six prerequisites for existence) which produces dryness in the body. In severe cases, if there is a feeling of pressure below the ribs and dilatation is present, extremities turn cold, restlessness and delirium happens, then warm clothes should be worn that absorb the heat externally.^[17]

Drugs (*Advia*)

To a patient with epidemic fever, *Qurs Kafoor* and *ruboob* acting as coolants are given. *Ma-ur-Rayeb* (water of curd) is given to drink, buttermilk, *Arq-e-Gulab*, *Aqueous of Paneer*, vinegar to be mixed with water and given, cold water is also beneficial. An antidotes like *Tiryaaq-e-Mashridutes*, *Tiryaaq-e-Wabai* or *Gil-e-Armani*

are recommended by Jalinus to use as prophylactic medicine.

MANAGEMENT OF THE EPIDEMIC THROUGH UNANI MEDICINE

In the Unani system of medicine, there is no description of corona virus, but the clinical features are similar to those of *Amraz-e-Waba* (epidemic disease). In Unani literature well description available for epidemic condition and their management. Use antidotes, especially during epidemic conditions. Some antidotes which have been described in Unani literature, such as *Tiryaaq-e-Wabai*, *Tiryaaq-e-Farooq*, *Tiryaaq-e-Arba*, *Tiryaaq-e-Nazli*, *Tiryaaq-e-Mashridutes*, *Qurs Zahar Mohra*, etc., are used as prophylactics and therapeutics. Because of its antimalarial activity, AYUSH-64 is considered to be effective among the high-risk coronavirus population. Researchers have reported that each of its constituents is effectively antiviral, anti-asthmatic, and immunoboosting.^[18] Single unani drugs like Behi dana (*Cydonia oblonga*), Unnab (*Zizyphus jujuba*) Sapistan (*Cordia latifolia*), Karanjwa (*Caesalpinia bonducella*) which acts as antioxidants, immunomodulators, tracheal smooth muscle relaxant and antipyretic as well as anti-inflammatory activity respectively. Kalonji (*Nigella sativa*), Seer (*Allium sativum*), Zanjabeel (*Zingiber officinale*), Aslassus (*Glycyrrhiza glabra*), Afsanteen (*Artemisia absinthium*), Gilo (*Tinospora cordifolia*) have antiviral activity. The compound formulations like Khameera Marwareed (3-5 gm) and Asgandh (Safoof) is used as immunity enhancer. Habb-e-Surfa (125-250 mg), Khamira-e-Banafsha (10-20 gm), Laooq-e-Sapistan (10-20 gm), Sharbat-e-Sadr (20-40 ml) is used for Dry cough while Laooq-e-Katan (10-20 gm) and Habb-e-Hindi Zeeqi (125-250 mg) is used for difficulty in breathing.

Flowers of *Matricaria chamomilla* L. are the main ingredient of Roghan-e-Baboona. It is composed of the flowers of *M. chamomilla*, which is found effective for acute viral nasopharyngitis, as well as for sore throat.^[19,20]

The Unani physicians have a very successful history of treating Nazla wabai (Swine flu) using Arq -e-Ajeeb. These studies support the use of Arq-e-Ajeeb for COVID-19. Arq-e-Ajeeb is a liquid preparation that contains thymol, menthol, and camphor. Menthol has been reported as an anti-inflammatory agent.^[21]

DISCUSSION

In *Unani* medicine control measures focused primarily on treatment of patient. The ancient Unani physicians have described various general measures for prevention of epi - demic diseases such as isolation at home; avoid visiting in a crowded place and close contact with infected persons, use gargle with unani preparations.^[22] Immunity (Quwat-e-Mudafe'at) is a defense system within the body to protect the host from invading pathogens. One of the therapeutic strategies in Unani

medicine is to increase the body's natural resistance and help in self-preservation (Quwaate-e-Mudabbera) to restore normal health *Tinospora cordifolia* hold free radical scavenging property and decrease the activities of superoxide dismutase and glutathione peroxidase in rat models.^[25]

Indian goose berry (Amla) is sour in taste and is one of the richest sources of vitamin C. It is used in common cold, fever, dyspepsia, hair growth, liver disorders etc. Various studies reveals that amla has a potent antioxidant, anti-inflammatory, immune enhancer, free radical scavenger, antipyretic, antitussive, hematinic, hepatoprotective, neuroprotective and anticancerous. Because of its extreme immune empowering property it is believed to be effective against viral infections.^[23]

Scientific studies have reported that the ingredients of *Tiryaaq Afayee* possess significant antiviral activity. For instance, Choi et al., 2019 have reported that Aloe vera ethanol extract (AVE) significantly decreases the viral replication of green fluorescent protein labelled influenza A virus in Madin-Darby Canine Kidney (MDCK) cells. The study also demonstrated that the antiviral activity of AVE is due to the presence of quercetin, catechin hydrate and kaempferol in the extract.^[24] The elderly people have higher susceptibility for acquiring different illnesses. General guidelines are provided for maintaining their health. The diet is nutritive and easily digestible and should be in accordance with temperament. Maintains good bowel habits, adequate sleep with moderate exercises and avoid drinking cold water. The Ministry of AYUSH is making serious efforts to promote a culture of interdisciplinary collaboration without losing the basic principles of the respective systems. It must be noted that the Ministry of Health and Family Welfare is also encouraging integrative approaches.

CONCLUSION

Unani system of medicine is one of the oldest systems of traditional medicine in the world which is popularly practiced in Indian sub-continent and other parts of the world. Unani healing systems employs a holistic approach to the prevention and treatment of disease. The aim is to restore the equilibrium of various elements, humors and faculties of the human body. Unani medicine gives importance to food as medicine when it is used in the management of diseases. It is called *Ilaj bil ghiza* (dieto-therapy). The Unani treatment approach consists of prevention of disease, thus increase the strength of the *tabi'at* by moderating the life style, food and diet through *asbab e sit e zarooriya*. Unani scholars have prescribed certain drugs that may be used as health protecting drugs during epidemics. They have emphasized more on the use of certain drugs which are known to improve host immunity during the outbreak of epidemics, endemics and pandemics. Various compound Unani formulations mentioned in Unani classical books,

may prove to be beneficial and can be used under the supervision of qualified Unani physicians for possible immune-boosting / symptomatic relief in upper respiratory tract infections. Therefore, by adoption of an appropriate lifestyle plan according to Unani system of medicine, use of regimes, appropriate use of general body tonics and immunity enhancer, it is possible to prevent mobility and mortality of Covid 19.

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