

## Tiryaaq-E-Arba (A Poly Herbal *Unani* Formulation) in Fighting Against COVID-19 Like Conditions—*Unani* Perspective

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### Abstract

*Coronavirus disease 2019 (COVID-19) is a pandemic disease of modern time with unique and rapid transmission rate and affected almost all the nations without respecting any border. World Health Organization stated it is an infective disease and pandemic. The coronavirus disease 2019 (COVID-19) which created in Wuhan, China, has now spread to 192 countries and organizational regions infecting nearly 800,000 persons of all ages as of 31 March 2020. In these most infected individuals who reveal minor symptoms like fever, upper respiratory tract symptoms, shortness of breath, and diarrhea. Severe cases of infection can lead to pneumonia, multiple organ failure, and death. Worldwide, at least 7900 deaths have been directly attributed to COVID-19, and this number is expected to rise with the ongoing epidemic. This is particularly crucial as the current outburst involves a new pathogen (SARS-CoV-2), on which limited knowledge happens of its infectivity and clinical profile. Research is going on therapeutic effectiveness of various agents including anti-malarial (Chloroquine and Hydroxychloroquine), antiviral drugs, and convalescent serum of recovered patients. Unani system of medicine is one of the old systems of medicine which is being discovered for providing preventive, sympathetic and rehabilitative care to patients. It has a detailed description of drugs that are used in many infectious diseases, including respiratory infections, gastrointestinal infections, etc. Immune response is necessary to eliminate virus and to stop disease development to severe stages. Therefore, it is very important to review the evidence about the preventive measures, control options such as immune-stimulator and prophylactic treatment in Unani medicine against COVID-19. This review precise various pharmacological actions of Unani formulation Tiryaaq-e-Arba in unani texts and various stated pharmacological activities which can maybe provide prevention, control and decline of complications of this pandemic disease.*

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### INTRODUCTION

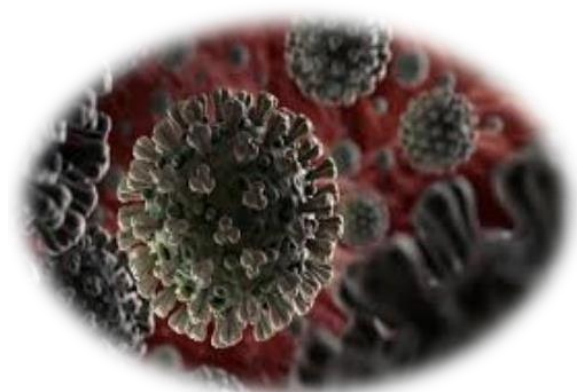
Epidemics of infectious diseases have been documented throughout history. Epidemics of small pox, leprosy, tuberculosis, meningococcal infections and diphtheria have been described in the Ancient Greece and Egypt [1]. *Hippocrate* was among the first to record his theories on the occurrence of disease in his treatise “Air, water, and places”, *Hippocrate* dismissed supernatural explanations of disease and instead attributed illness to characteristics of the climate, soil, water,

mode of life, nutrition and surrounding of the patient [2-5] Severe acute respiratory syndrome coronavirus-2 (SARSCoV-2) is a newly identified virus which can cause symptoms including cough, cold, fever, headache, bodyache, and breathlessness with pneumonia similar like in severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV) [6, 7]. Corona virus disease was named “COVID-19” by the World Health Organization (WHO). Which was the first predictable in Wuhan, Hubei Province, in China in December 2019 and may create from eating wildlife, an recognized tradition in the oldest of human principles. Corona virus disease is mainly transmitted through droplet infection; touching and shaking hand with infected individual may also transmit the infection. According to the researchers, this virus may be transmitted via fluids i.e. mucus. Generally, symptoms appear after an incubation period of two weeks. During this week virus replicates in the upper and lower respiratory tracts. Common symptoms are fever, cough, sore throat, runny nose, breathlessness and the lesion in the lungs in an infected individual [8-14] Medical diagnosis of COVID-19 is generally based on epidemiology, history, clinical features and some diagnostic tests. According to unani system of medicine, we can predict it by *Nabz* (Pulse) and *Baraaz* (Stool), Usually *Nabz* becomes *Sagheer wa Mutawatir*, and the *Baraz* (stool) of infected person has foul smell. Ordinarily used technique for SARS-COVID-19 is RT-PCR [15, 16] (Figure 1).

### UNANI CONCEPT

As per *Unani* medicine exact term or disease is not mentioned in *Unani* literature but it can be explained under the heading of *Humma-e-Wabaiya* Symptoms of *Humma-e-Wabaiya* and COVID-19 looks very much similar. *Hummae-Wabaiya* is the type of terrible fever which occurs due to inevitable changes in the air (qualitatively or quantitatively). Because of unavoidable changes in the air, it becomes impure and finally it gives abnormal temperament of *Rooh* which afterword results into disease and death. As fresh and pure air is essential for health, any contamination in the air may affect the health of any person and it depends on the intensity of contamination [15, 18]

*Zakariya Razi* (865–925 CE) stated in his book *Kitab alMansoori* that most epidemics occur during the autumn season, mostly when previous summer season was humid, and the wind is still [15], *Razi* in the 15th volume of his treatise *Kitab al-Hawi* (The Comprehensive Book of Medicine), also stated that change of temperature makes people more susceptible to respiratory infections and stressed this fact and stated that ‘there will always be roughly combined in patients of epidemics, whether a food, place, drink or travel history’ [19] Furthering sight, *Ibn Sina* (980–1035 CE) listed that epidemics feast from one individual to another and one city to another (Sina, 1878). During the 14th-century plague pandemic, Arabian scholar *Ibn Khatib* (1313–1374 CE) stated that ‘most of the people who come in contact with a plague victim will die’. In the same background he states that ‘the disease feasts through clothes, tools and jewellery’ [20, 21]. In the same manner, this speech stresses on social distancing and isolation, which is two important aspects of prevention during COVID 19 pandemic.



**Figure 1.** Corona Virus [17].

In *Unani* system of medicine, “Decreased Immunity Disorders” was predictable by most noticeable physicians in standard *Unani* texts. *Unani* medicine is rich with formulations useful in the prophylactic and therapeutic management of *Nazla-e-wabaiya* (epidemic influenza) and other flu like symptoms. In *Unani Tib*, “*TABIYAT*” is considered as a real healer. In this concern, “*MAJOOSP*” mentioning “*Hippocrates*” wrote that “*TABIYAT*” is the real restore of health and curer of disease. If the *Tabiyat* is strong enough and has not acceded 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 humours of these persons are similar to the putre air so these people are susceptible to *wabai amraz* [22-24]. *Unani* scholars had stated different diet schedule and anticipatory drug regimens including the use of *muharrikat* and *Tiryaqiyat* to combat from these conditions incurred from weak *Tabiyat*. *Tiryaqe Arba* is an age old pharmacopeial *Unani* compound formulation which is used in immunocompromised, weak and thin patients and also used in catarrh and recurrent infections by *Unani* Hakims [25].

### Prevention

In *Wabai amraz*, *Unani* physicians recommended for open and airy house with proper ventilation, it is advised to keep patient in cold place, sprinkle garlic and onion at the walls of the house. Elimination of *fuzlaat* (waste material) from all over body is necessary in order to maintain health, for this purpose they advised venesection. He also advised to take less amount of meal in that situation. *Unani* physicians recommended use of laxatives and diuretics which beneficiates during the initial phase of epidemic. Isolation of infected person from healthy person is mandatory. Patient as well as health care workers should be asked to wear a surgical mask. Unnecessary traveling should be avoided at this time [26, 27].

In *Unani* classical literature several single drugs and compound formulations have been used for several decades which possess immune-stimulatory, antipyretic, expectorant as well as antiviral properties. *Tiryaq-e-Arba* is one of the *unani* compound formulations which have immune-stimulatory activity and its ingredients have expectorant and antipyretic, anti-viral activities. *Tiryaq-e-Arba* is a well-documented and well-known drug. *Tiryaq e Arba* was used by *Avicenna* and *Galen* in healthy persons as well as in patients during epidemics [28, 29]. *Hakim Azam* khan has mentioned that *Tiryaq-e-Arba* is a good anti-inflammatory, anti-flatulent, resolvent and antidote. It is effectively used in the control and treatment of infectious diseases during the epidemic outbreaks such as cholera, plague, *nazlae muzmin* etc. *Hakim Ghulam Jeelani* has mentioned that *Tiryaq-e-Arba* strengthens Heart and Brain [30, 31].

### Tiryaq-e-arba

The literal meaning of *Tiryaq* is antidote and *Arba* is an *Arabic* word, which stands for four. *Tiryaqe Arba* is a compound *Unani* formulation, consisting of four *mufrad* (single) drugs namely *Zaravand Taveel* (*Aristolochia longa*), *Habbul Ghaar* (*Laurus Nobilis*), *Pakhanbed* or *Juntiana romi* (*Bergenia ligulata*) and *Murmaki* (*Commiphora myrrh*). As per the book “*Bayaz Khas/ilajul amraz*” of *Hakim Shareef Khan*, translated by *Hakeem Mohammad Kabiruddin* *Tiryaq e Arba* is also know by the another name of “*Tiryaq Sagheer*” [32]. The compositions of the formulation of *Tiryaq e Arba* are as follows [33] (Table 1 and Figure 2):

**Table 1.** Formula of Preparation of *Tiryaq e Arba* [33]

S.N.	Name	Botanical Name	Quantity
1	<i>Juntiyana/Pakhanbed</i> [33]	<i>Gentiana lutea</i> L./( <i>Bergenia ligulata</i> ) [33]	1 part [33]
2	<i>Zaravand Taweel</i> [33]	<i>Aristolochia longa</i> L. [33]	1 part [33]
3	<i>Mur Makki</i> [33]	<i>Commiphora myrrha</i> (Nees) Engl. [33].	1 part [33]
4	<i>Habb ul Ghar</i> [33]	<i>Laurus nobilis</i> L. [33]	1 part [33]
5	<i>Honey or Sugar</i> [33]		Q.S [33]



**Figure 2.** *Tiryaaq e Arba* [34].

### Pharmacological Actions of Ingredients of Tiryaaq-Arba [35]:

Tiryaaq-e-Arba is a well-known formulation for its different pharmacological activities as antiviral, analgesic, anti-inflammatory, anti-spasmodic etc. Some of the known pharmacological actions which are mentioned in Unani literature and proven scientifically are mentioned below:

1. Juntiyana (*Gentiana lutea* L.) [35]:
  - Anti-inflammatory and wound healing
  - Antioxidant activity
2. Habb ul Ghar (*Laurus nobilis* L.) [35]:
  - Antioxidant activity
  - Antiviral Activity
  - Immunomodulatory activity
3. Zarawand Taweel (*Aristolochia longa* L.) [35]:
  - Antioxidant activity
  - Immunomodulatory activity
4. Mur Makki (*Commiphora myrrha* (Nees) Engl.) [35]:
  - Antioxidant activity
  - Anti-inflammatory activity

### Therapeutic Uses

*Hakim Azam* khan has mentioned that *Tiryaaq e Arba* [30] is a good anti-inflammatory, anti-flatulent, resolvent and antidote [31]. In infectious diseases, it is effectively used in the control and treatment of disease during the epidemic outbreaks such as cholera, plague, *nazlae muzmin* etc. *Hakim Ghulam Jeelani* has mentioned that *Tiryaaq Arba* strengthens Heart and Brain. It is effective antidote for poisons and toxins [36] *Ibne sina* has mentioned in *Al Qanoon* that *Tiryaaq Arba* is effective antidote against scorpion bites, spider poison and in treating all cold diseases [37]. Its action includes *Dafe Sumoom*, *Dafe Tashannuj*, *Mufattehe Sudad*, *Mudirre Baul*. It's therapeutically used in *Tasammum*, *Tashannuj*, *Qulanj*, *Usre waladat*, *Tasaddude Urooq* and *Istisqa* [38]. *Hakim Akbar Arzani* has mentioned in his book *Qarabadeene Quadri* [39] that *Tiryaaq Arba* is an antidote for scorpion bite and all animal poisons. It corrects liver and spleen. It is a first and oldest *Tiryaaq* prepared by *Indru makhiz* which is *Garm 3 and Khushk 2*. Its life span is 2years [39]. *Hakim Mohd. Shariff Khan* [40] in his book *Bayaze khaas al maroof ilajul amraaz* has mentioned that *Tiryaaq Arba* is also known as *Tiryaaq sagheer* which is *Garm 2 and Khusk 2*. *Tiryaaq Arba* is antidote against all poisons including snake, scorpion and spider bites.

Mizaj: *Garm 3 and Khushk 2, Garm 2 and Khusk 2*.

Dosage: 6 gm BD

### Method of Preparation

*Tiryaaq* is a semi solid preparation which comes in *Majoon* category. For any semi solid preparation, *Qiwam* (base) of different consistencies (tar) is generally made which depends on the nature of ingredient drugs to be used in *Tiryaaq e Arba*. Genarally, this is made by adding *Araq*, *Aab* and *Aab e*

*samar*, etc. in any of the bases of purified honey, sugar, candy or jaggery etc and boiled over a low heat till it acquires a required consistency. The bases are generally purified by adding *Aab e lemu* (lemon juice), *Satt e lemu* (lemon extract), or *Shibb e yamani* (Alum) before making *qiwam*. Afterwards the ingredients are mixed in *qiwam* to prepare *Tiryaaq*. *Qiwam* for *Tiryaaq* is of two tar (consistency). All the dry ingredients of *Tiryaaq e Arba*, after being mixed together and sieved through 80-mesh, are made into a *Sufoof* (powder) and when the proper *qiwam* (consistency) forms, the medicinal *sufoof* (powder) of ingredients is gradually added into *Qiwam* during stirring till both mixes. *Tiryaaq* is preserved in glass jar [41-44]. *Tiryaaq-e-Arba* has properties of *Dafa e Sumoom* (antidote) and *Dafa e Tashannuj* (anti-spasmodic) and is used in the dose of 3-5 gm with lukewarm water [45-46] (Table 2).

**Table 2.** Description of Ingredients of *Tiryaaq e Arba* [47-54]

S.N.	Ingredients	Actions	Therapeutic Uses	Temperament	Parts used:
1	<i>Habbul ghar</i> (Laurus Nobilis,) [49]	antifungal, antibacterial, anti-inflammatory, antioxidant, carminative, aromatic, diaphoretic, digestive, diuretic, emetic and stomachic properties [47]	Treats <i>Sudae balghami</i> , strengthens memory power, cures epilepsy, facial paralysis and hemiplegia. Effective in asthma, conductive deafness and tinnitus. Melts calculi and treats dysuria and dribbling of urine, antidote for all animal poisons, resolves inflammation of the chest and lung and treats all cold inflammations of the chest. Treats chronic cough and avoids falling of secretions and morbid matter on lungs [48].	<i>Garm 3 wa Khushk 3</i> (Hot3 and Dry) 3 and according to some <i>Garm wa Khushk</i> in 2 degree [48].	Fruit and seeds 47
2	<i>Pakhan bed romi</i> [49]. ( <i>Bergenia ligulata</i> )	<i>Muqawie badan</i> (general tonic), <i>Muqavviye meda</i> (strengthens stomach), <i>Kasire riyah</i> (carminative), <i>Mudir baul o haiz</i> (diuretic and emmenagogue) and <i>Tiryaaq samoom</i> (antidote for Poisons) [48]	Effective antidote in snake and scorpion poisons, useful in the treatment of <i>Zoafe meda</i> (stomach weakness), <i>zoafe masana</i> (bladder weakness) and <i>darde meda</i> (stomach ache). Useful as a diuretic, emmenagogue and also as an abortifacient drug [50].	<i>Garm 3 wa Khushk 3</i> , according to some <i>Garm 3 wa Khushk 2</i> [50]	Root [50]
3	<i>Murmukki</i> 51 (commiphora myrrha)	<i>Dafae tafoon</i> (antiseptic), <i>Mujaffif</i> (absorbent), <i>Jaali</i> (detergent), <i>Kasire Riyah</i> (antiflatulent), <i>Muqawie Meda</i> (strengthens stomach), <i>Khatile Kirme Shikam</i> (antihelminthic), <i>Munaffise Balgham</i> (expectorant), <i>Muhalil</i> (anti-inflammatory) and <i>Mufatteh</i> (lithotriptic) [52]	Useful in indigestion and to kill and expel intestinal worms, asthma, cough, dryness and hoarseness of voice, upper respiratory infections, rheumatoid arthritis, gout and sciatica. Helps in dissolving <i>balghami</i> inflammations [48, 53]	<i>Garm 3 wa Khushk 3</i> (Hot 3 and Dry) 3 [51]	Leaves [51]
4	<i>Zaravand Taweel</i> [51] ( <i>Aristolochia longa</i> )	Tonic, stimulates uterus, reduces inflammation [51], control bacterial infection and promotes healing [51] emmenagogue, antiseptic, odontalgic, sudorific, antihelminthic [51]	It's an antidote for plants and animal poisons. It absorbs the secretions and resolves cold inflammations, removes. <i>Balgham</i> , resolves obstructions, melts calculi, glitters the facial skin, removes flatulence, brings about urination and menstruation. It checks chills and rigors in fevers and resolves the inflammation in haemorrhoids. Strengthens visceral organs and resolves the inflammation of spleen and splenomegaly [51].	Hot 3 & Dry 2, Hot 2 & Dry 3 [51] Hot 3 & Dry 3 [51]	Roots, leaves, stem and flowers [54].

The ingredients of Tiryag e Arba has various Therapeutic uses and activities related to COVID-19 infection. The detailed description is as follows:

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