

**Original article****Khamira Banafsha for the symptomatic treatment of Covid-19 Disease**

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**Abstract**

Respiratory illness is one of the most important public health problems in many countries worldwide. Even though most of the ailments are treatable with normal care, respiratory-related mortality continues to increase year after year. The global situation is deteriorating as a result of the COVID-19 epidemic. Numerous Unani formulations are beneficial against a variety of respiratory disorders, but they must be clinically researched before they can obtain widespread acceptance in the modern world. At the moment, no antiviral medication is either available for each respiratory disease or is costly and not easy to use in pandemics like COVID-19 on large scale, although Unani medicines may be considered an option. *Khamira Banafsha* (KB) is a semi-solid blend of three dried flowers, *Viola odorata* L., *Borago officinalis* L., and *Rosa damascena* Mill and the distillate of *Rosa damascena*, and sugar. The components in this formulation are well-known and frequently utilized in the treatment of respiratory problems. The formulation has been used to treat a wide range of illnesses for decades. This review will discuss the pharmacology, ethnopharmacology, and repurposing of KB as an adjuvant or symptomatic treatment for Covid-19 illness. The chemical composition of the ingredients may be evaluated *In-silico* to identify their eligibility for Covid-19 disease symptomatic management.

**Keywords:** Antiviral, Antipyretic; Covid-19; Herbal medicine; *Khamira Banafsha*; Repurposing; Respiratory diseases; Unani medicine

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**Introduction**

In addition to the rhinoviruses and coronaviruses, the common cold is caused by many other viruses and mostly affects the upper respiratory system<sup>1</sup>. It is a prevalent condition worldwide that affects the

population of all age groups particularly younger people in adulthood<sup>2</sup>. Acute respiratory infection is the second most commonly recognized disease entity in medical facilities<sup>3</sup> and also the most typical diagnosis in emergency rooms<sup>4</sup>. A quarter of respondents in the United States said they had

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taken a cough or cold drug followed by a sedating or non-sedating antihistamine in the previous week for the management of respiratory diseases. One of the most common reasons to take vitamins and herbs is to help prevent colds and influenza<sup>5</sup>. In a study conducted by telephone or personal interview to estimate the prevalence of recent OTC medication use in a national sample of 3-year-old preschool-age children. Total 8145 children were interviewed by their mothers about OTC medications given in the last 30 days and the type of medication given. In the last 30 days, 53.7% of all 3-year-olds in the US received OTC medications. Among OTC medication users, acetaminophen (66%) and cough/cold medicine were most commonly reported (66.7 percent)<sup>6</sup>.

The successful use of herbal drugs, from Unani and Ayurveda to enhance immunity and deal with Coronavirus signs and symptoms, has provided an opportunity to prove its strength and develop an effective and safe remedy for respiratory viral infections. The Unani system of medicine (USM) is holistic and treats the whole body rather than the virus or causative organism. There are several single and compound formulations that Unani physicians are using for centuries to treat respiratory diseases. It is high time that these formulations should be tested clinically for each indication and also for new indications like Coronavirus. The Coronavirus affects the respiratory system, so the drugs used in respiratory diseases may be tried. An important formulation *Khamira Banafshais* chosen here to discuss its possible use in Coronavirus prevention and treatment<sup>7,8,9</sup>.

### Methodology

The details of *Khamira Banafsha* in Unani medical practice have been gleaned from *Qarabadeen Ahsani* (Urdu), while the information regarding its ingredients was collected from various books including *Aljameul Mufradat Al-Adviawal-Aghzia*; *Khazain-ul-Adviya*; *Al-Qanunfi'l Tibb*; *Bustanul Mufradat*; *Makhzanul Mufradat*; *Tajul Mufradat* and *National Formulary of Unani Medicine*. We conducted a systematic review of contemporary research on ingredients of the formulation about their pharmacological studies, clinical trials, and ethnopharmacology, using online resources such as PubMed, Scopus, Science Direct, and Google Scholar. Keywords such as Antiviral, Antipyretic, Covid-19, Herbal medicine, *Khamira Banafsha*, Repurposing, Respiratory diseases, Unani medicine, and ethnopharmacology were used.

### Clinical Presentation and Epidemiology

COVID-19 has a wide range of clinical symptoms, from asymptomatic to acute respiratory distress syndrome and multi-organ failure. Fever, cough, sore throat, dyspnea, myalgia or fatigue, sputum production, headache, hemoptysis, and diarrhoea are among the first symptoms of Covid-19. Conjunctivitis has also been described. Only a few patients did not have a fever when the disease was still in its early stages. Nearly 30% of patients developed acute respiratory distress syndrome (ARDS), (12%) developed an acute cardiac injury, 7% developed acute kidney injury (AKI), and 7% developed shock. As a result, they are difficult to distinguish from other respiratory infections. In a small percentage of patients, the condition can develop to pneumonia, respiratory failure, and mortality by the end of the first week<sup>10,11</sup>.

COVID-19 has been confirmed in approximately 3.2 crore people worldwide as of September 2021. Because only a fraction of acute infections is detected and reported, the reported case counts understate the actual burden of COVID-19. After accounting for probable false positives or negatives, seropositivity suggests that the rate of past exposure to SARS-CoV-2, as expressed by seropositivity, surpasses the incidence of reported cases by around 10-fold or more, according to seroprevalence surveys in the United States and Europe<sup>12,13,14</sup>.

### Modern Medical interventions

Medications for SARS, MERS, HIV/AIDS, and malaria have been repurposed as successful COVID-19 treatments. Rather than researching novel medicines, medication repurposing can save time and money<sup>15</sup>. It appears that the catalytic sites of 2019-nCoV enzymes that potentially be antiviral targets are substantially conserved, with strong sequence similarity to the SARS and MERS enzymes. Structural analysis of viral enzymes suggests that drug-binding pockets are conserved in 2019-nCoV, SARS, and MERS<sup>16</sup>. Thus, existing MERS and SARS inhibitors were repurposed for 2019-nCoV. Listed below are licensed medications or experimental compounds that have already been evaluated in clinical trials for other diseases<sup>17</sup>. Several approved and investigational nucleoside analogs (favipiravir, ribavirin) may be effective against 2019-nCoV. Adenine or guanine derivatives target the RNA-dependent RNA polymerase and inhibit viral RNA synthesis in RNA viruses, including human coronaviruses. Favipiravir

(T-705), a guanine analog licensed for influenza treatment, can efficiently inhibit the RNA-dependent RNA polymerase of RNA viruses such as influenza, Ebola, yellow fever, chikungunya, norovirus, and enterovirus<sup>18</sup>, and recently against 2019-nCoV (EC50 = 61.88 M in Vero E6 cells)<sup>19</sup>.

Remdesivir exhibits broad-spectrum activity against RNA viruses such as MERS and SARS. 2019-nCoV was suppressed by remdesivir (EC50 = 0.77 M in Vero E6 cells)<sup>18</sup>, and in January, 2019-nCoV patient in the US recovered after receiving intravenous remdesivir<sup>19</sup>. An approved immune modulator, chloroquine, shows inhibitory effects against 2019-nCoV (EC50=1.13  $\mu$ M in Vero E6 cells) and is being evaluated in an open-label trial (ChiCTR2000029609). Nitazoxanide, approved for diarrhea treatment, could also inhibit 2019-nCoV (EC50 = 2.12  $\mu$ M in Vero E6 cells)<sup>18</sup>. Remdesivir was also discovered to exhibit antiviral activity against other RNA viruses, particularly those belonging to the Coronaviridae family, such as SARS-CoV, MERS-CoV, and COVID-19<sup>20, 21</sup>. Grein et al. published the most comprehensive study to date, reporting on the compassionate use of Remdesivir in 61 patients, 53 of whom had complete follow-up. There was an improvement in oxygen support in 36 of 53 patients (68%)<sup>22</sup>. Even though there is a general dearth of prospective randomized studies at the moment, Remdesivir continues to demonstrate very encouraging results.

Convalescent plasma therapy with COVID-19 survivor antibodies has been used in many trials, most notably in case-based settings. Shen et al. reported on the use of convalescent plasma in five critically ill patients with ARDS who were ventilated mechanically (age range, 36-65 years)<sup>23</sup>. Additionally, Zhang et al. described significant clinical improvement in four patients treated with convalescent plasma<sup>24</sup>. Ye et al. recently reported on six COVID-19 patients from Wuhan, China, who had a favourable outcome in terms of signs and symptoms improvement<sup>25</sup>. The combination of chloroquine, hydroxychloroquine, and azithromycin has gained considerable popularity and the promise for effective treatment; however, there are some disagreements and divergences between research and results<sup>20, 26, 27</sup>. Il-6 monoclonal antibodies were launched for the treatment of COVID-19-associated cytokine release syndrome and have been utilized in just a few case series worldwide, with generally favourable results<sup>28, 29</sup>. Statins are also regarded safe, and they have

significant preventative benefits on the prevalence of atherosclerosis, plaque stabilization, and endothelial dysfunction recovery<sup>30</sup>.

### Natural Therapies

Traditional Chinese Medicine (TCM) based treatments improved symptoms and enhanced immunity in COVID-19 patients. Patients respond well to combining TCM and Western medicine methods on COVID-19<sup>31,32</sup>. Approximately 3100 TCM personnel had been deputed to the Hubei district at the time of the epidemic. TCM was formally accepted by Chinese guidelines to treat COVID-19 [33]. The decoction, Chinese patent medicine, acupuncture, and other TCM-specific therapies were all utilised extensively, with the majority of cases being treated based on syndrome differentiation. Specific TCM wards have been developed, as well as a recognized hospital; also, the TCM staff participates in treatment collaboratively<sup>31, 34</sup>.

TCM has advocated providing prescriptions that are likely to be successful based on existing treatment outcomes, such as qingfeipaidu decoction (QPD), gancaoganjian decoction, shenganmahuang decoction, and qingfeitouxiefuzheng recipe. QPD, which is composed of approximately 21 herbs, has been advocated in China as a general prescription for the diagnosis and treatment of COVID-19<sup>34</sup>. Among the 701 confirmed patients treated with QPD, 130 cases were cured and discharged, 51 cases had their clinical symptoms resolved, 268 cases had their symptoms improved, and 212 cases had their symptoms remained stable without aggravation [35]. QPD has a cure rate of more than 90% against COVID-19. The primary location of the pharmacological activity is the lung. Additionally, it has been shown to protect the heart, kidneys, and other organs. Among the identified potential targets, the majority co-expressed ACE-2, the COVID-19 receptor, implying the possibility of improving COVID-19. It prevents the replication of COVID-19 by interfering with various ribosomal proteins<sup>36</sup>. QPD may regulate and alleviate excessive immune response and inflammation by modifying immune and cytokine-related pathways, as demonstrated by functional enrichment analysis<sup>37</sup>. Additionally, molecular docking suggested that the patchouli alcohol, ergosterol, and shionone components of the formula would have a greater anti-COVID-19 effect, leading to the discovery of novel molecule structures for the creation of new medications<sup>38</sup>. The results of molecular docking indicated that the phytochemicals in *Arq Ajib* (a

multi-ingredient Unani formulation) have a high affinity for and contact with the S glycoprotein and 3CLpro. Quercetin and isorhoifolin were found as interesting candidates from *Mentha arvensis* for their ability to bind with 3CLpro and spike glycoprotein and thereby impede viral replication and entry into the host<sup>39</sup>.

### Unani Medicines

*Khamira Banafsha* is a compound formulation containing the decoction of three important flowers, i.e., Gul-e-Banafsha (flowers of *Viola odorata* L.), Gul-e-Gaozaban (flowers of *Borago officinalis* L.), and Gul-e-Surkh (flowers of *Rosa damascena* Mill.) [40]. *Khamira* is a semisolid preparation made up of decoction of plant parts in the base (*Qiwam*) made of purified sugar. The composition of the *Khamira Banafsha* is given in Table-1.

**Table-1:** Composition of *Khamira Banafsha*

S. No	Name of Medicine	Scientific name	Part used	Total Quantity
	Gul-e Banafsha	<i>Viola odorata</i> L.	Flower	36 gm
	Gul-e Surkh	<i>Rosa damascena</i> Mill.	Flower	36 gm
	Gul-e Gaozaban	<i>Borago officinalis</i> L.	Flower	36 gm
	QandSafaid	Sugar	Sugar	375 gm
	AraqGulab	<i>Rosa damascena</i> Mill.	Distillate	500 ml

Therapeutic uses: *Khamira Banafsha* is recommended in *Amrad-i-Sadr* (diseases of lungs), *Dhāt al-Ri'a* (pneumonia), *Dhāt al-Janb* (pleurisy), and it expels *Khilt Safra* (yellow bile).

### Ethnopharmacology of ingredients of *Khamira Banafsha*

#### 1. Gul-e Banafsha (Flowers of *Viola odorata* L.)

It is the flower of *Viola odorata* L. frequently used in USM in various formulations. There are several formulations where it is the main ingredient while in other as subsidiary ingredient.

#### Therapeutic actions (*Afa'al*)

Therapeutic actions of *Banafsha* as mentioned in Unani literature are *Muhallil-i-Waram* (anti-inflammatory), *Mu'arriq* (diaphoretic), *Muqawwī* (tonic), *Musakkin-i-Dimāgh* (sedative), *Munaffith-i-Balgham* (expectorant), *Mulaṭṭif* (demulcent), *Mumallis* (emollient), *Dafi'-i-Hummā* (antipyretic), *Musakkin-i-Suda* (relieve the headache), and *Musaffi-i-Dam* (blood purifier)<sup>41; 42; 43; 44; 45</sup>.

### Therapeutic Uses

*Banafsha* is used to treat the following conditions: *Su'al* (cough), *Nazla* (coryza), *Suda* (headache), *Hummāmurakkaba* (complex fever), *Dhāt al-Janb* (pleurisy), *Dhāt al-Ri'a* (pneumonia), *Khushūna al-Halaq* (irritation of throat), and *Sozish-i-Halaq* (burning in the throat)<sup>41; 42; 43; 44; 45</sup>. Additionally, it is used in the household as a remedy for coughs, sore throats, and hoarseness of voice. It is also prescribed in conjunction with various aperients such as tamarinds (*Tamarindus indica* L.) and myrobalans (*Terminalia chebula* Gaertn. Retz.)<sup>46</sup>. When applied directly to the head, *Banafsha* relieves headaches caused by high heat. If dry *Banafsha* is combined with sugar, severe purgation is likely. *Banafsha* leaves are traditionally used to cure stomach discomfort, eye edema, and other organ swellings. It is well-known for its efficacy in treating infantile seizures (*Umm al-Sibyān*) and Ludwig's angina (*Khunāq*)<sup>47</sup>.

### Important formulations of GB

In Unani Medicine, drugs from the plant, mineral, and animal origin have been used either as a single entity or in a combination of more than one drug in specific proportion mentioned in Unani Pharmacopoeias and National formularies. If more than one drug has been mixed in a specific proportion by a particular method, it is called compound formulation. The following compound formulations contain *Banafsha* (*Viola odorata* L.) as an ingredient.

- *Habb-e-Banafsha* has been used to treat *Suda'* (headache), *Dhīq al-Nafas* (asthmatic bronchitis), and *Su'al* (cough).
- *Dayaqooza* has been used to treat *Su'al* (cough) and *Nazla-o-Zukam* (coryza and catarrh).
- *Habb-e-Ghariqoon* has been used to treat *Dhīq al-Nafas* (asthmatic bronchitis).
- *Habb-e-Luban Qawi* has been used to treat *Su'āli-Nazli* (cough due to coryza).
- *Habb-e-Sil* has been used to treat *Sill* (phthisis).
- *Itrifal-e-Zamani* has been used to treat *Su'al* (cough), *Nazla-o-Zukam* (coryza and catarrh).
- *Majoon-e-Antaki* has been used to treat *Suda'* (headache).
- *Mufeed Joshanda* has been used to treat *Nazla-o-Zukam* (coryza and catarrh) and *Hummā* (fever).
- *Qairooti Bazr-e-Katan* has been used to treat *Dhāt al-Janb* (pleurisy) and *Dhāt al-Ri'a* (pneumonia).

- *Qairooti Muhallil* has been used to treat *Dhāt al-Janb* (pleurisy) and *Waram* (inflammation).
- *Qairooti-e-Akhzar* has been used to treat *Su'āl* (cough), *Dhāt al-Janb* (pleurisy), and *Dhāt al-Ri'a* (pneumonia).
- *Qairooti-e-Babuna* has been used to treat *Dhāt al-Janb* (pleurisy) and *Shūsa* (intercostal neuralgia).
- *Qairooti-e-Mamool* has been used to treat *Shūsa* (intercostal neuralgia), *Dhāt al-Ri'a* (pneumonia), and *Dhāt al-Janb* (pleurisy).
- *Qurs-e-Zat-ul-Janb* has been used to treat *Dhāt al-Janb* (pleurisy).
- *Sadri* has been used to treat *Su'āl* (cough) and *Dhīq al-Nafas* (asthmatic bronchitis).
- *Sharbat-e-Banafsha* has been used to treat *Su'āl* (cough), *Nazla-o-Zukam* (coryza and catarrh), and *Hummā* (fever).
- *Sharbat-e-Ejaz* has been used to treat *Su'āl* (cough) and *Nazla-o-Zukam* (coryza and catarrh).
- *Sharbat-e-Nazla* has been used to treat *Nazla-o-Zukam* (coryza and catarrh) and *Su'āl* (cough)<sup>48; 49; 50; 51; 52</sup>.

### **Gul-e Surkh (GS) (Flowers of *Rosa damascena* Mill.)**

It is the flower of *Rosa damascena* Mill. they are commonly used in USM in various forms. There are several formulations where it is the main ingredient, like *Gulqand* (a mixture of flowers with sugar), *Araq Gulab* (a distillate of flowers), *Roghan-e Gul* (oil obtained from flowers), and also used as an ingredient in several formulations.

#### **Therapeutic actions (*Afa'al*)**

It has several therapeutic actions such as *Dafi'-i-Ta'affun* (antiseptic), *Musakkin-i-Alam* (analgesic), *Muqawwi-i-Badan* (general tonic), *Mushil*, *Muqawwi*(tonic), *Muhallil-i-Waram* (anti-inflammatory)<sup>41; 45; 46; 47; 54; 55</sup>.

#### **Therapeutic Uses**

Based on its various therapeutic actions, it is used to treat various diseases such as *Du'f al- A'dā' Ra'isa* (weakness of vital organ), *Du'f al-Badan*(general weakness), *Khafaqān* (palpitation), *Khushūna al-Halaq* (irritation of throat), *Sozish-i-Halaq* (burning in the throat), *Suda* (headache), *Waram al-Lawzatayn* (tonsillitis), *Hummā* (fever), *Ghashī* (syncope), *Nafth al-Dam* (hemoptysis). *Gul-e-surkh* taken with

*Sharbat-e-Banafsha* (syrup a compound formulation) is ineffective in asthma<sup>41; 45; 46; 47; 54; 55</sup>.

#### **Important formulations of GS**

- *Araq Gulab* has been used to treat *Du'f al-A'da' Ra'isa* (weakness of vital organ) and *Khafaqān* (palpitation).
- *Dawa-ul-Misk Barid Jawahar Wali* has been used to treat *Du'f al-A'dā' Ra'isa*(weakness of vital organ),
- *Dawa-ul-Misk Motadil Jawahar Wali* has been used to treat *Du'f al- A'dā' Ra'isa* (weakness of vital organ),
- *Itrifal Muqawwi Dimāgh* has been used to treat *Nazla* (coryza), and *Sudā'* (headache).
- *Itrifal Ustukhuddus* has been used to treat *Suda'* (headache), *Nazla Muzmin* (chronic coryza),
- *Itrifal-e-Zamani* has been used to treat *Su'āl* (cough), *Nazla-o-Zukam* (coryza and catarrh).
- *Jawarish Zaruni Ambari* has been used to treat *Su'āl Balghami* (phlegmatic cough) and *Niqris* (gout).
- *Khameera Abresham Arshadwala* has been used to treat *Du'f al-A'da' Ra'isa* (weakness of vital organ) and *Khafaqān* (palpitation)
- *Khamira Marwareed Banuskha-e-Kalan* has been used to treat *Du'f al-Qalb* (weakness of the heart) and *Khafaqān* (palpitation).
- *Mufarrah Shaikh-ur-Raisand Mufarreh Yaqooti Motadil* have been used to treat *Du'f al-Qalb* (weakness of the heart).
- *Qurs Kafoor* has been used to treat *Hummā Diqqiyya* (hectic fever) and *Hummā-i-Muharriqa* (high-grade fever).
- *Qurs-e-Sartan-Kafoori* has been used to treat *Hummā* (fever), *Diq* (asthma), *Sill* (phthisis), and *Surfa* (cough).
- *Qurs-e-Ward* has been used to treat *Hummā Balghamiyya* (fever due to phlegm), and *Sharbat Faryad Rashes* been used to treat *Su'āl* (cough) and *Nazla* (coryza)<sup>48; 49; 51</sup>.

### **2. Gul-e Gaozaban (Flowers of *Borago officinalis* L.)**

The flowers and leaves of *Borago officinalis* L. are commonly used in the USM as *Gul-e Gaozaban* (GG) and *Berg-e-Gaozaban* (BG), respectively. The GG is the main ingredient in several formulations,

while in many a subsidiary ingredient. In *Khamira Banafsha*, flowers are used. The therapeutic actions, therapeutic uses, and essential formulations used to treat respiratory diseases mentioned in Unani literature are described here.

### Therapeutic actions (Afa'al)

*Dafi'-i-Hummā* (antipyretic), *Muqawwi-i-A'dā' Ra'isa* (tonic for vital organs), *Muqawwi-i-Qalb* (cardio tonic) and *Munaffith-i-Balgham* (expectorant)<sup>41; 42; 44; 45; 46; 47</sup>.

### Therapeutic Uses

*Dhīq al-Nafas* (asthmatic bronchitis), *Surfa Yubsiyya* (dry cough), *Khafaqān* (palpitation), *Su'al* (cough), and *Nazla-o-Zukam* (coryza and catarrh)<sup>41; 42; 44; 45; 46; 47</sup>.

### Important formulations of GG

- *Ambari* has been used to treat *Du'f al-A'dā' Ra'isa* (weakness of vital organ), *Du'f al-Badan* (general weakness).
- *Araq-e-Gaozaban* has been used to treat *Nazla-o-Zukam* (coryza and catarrh), *Du'f al- A'dā' Ra'isa* (weakness of vital organ), and *Khafaqān* (palpitation).
- *Dawaul Misk* has been used to treat *Du'f al- A'dā' Ra'isa* (weakness of vital organ), and *Khafaqān* (palpitation).
- *Dawa-ul-Misk Barid Jawahar Wali* has been used to treat *Du'f al- A'dā' Ra'isa* (weakness of vital organ), and *Khafaqān* (palpitation).
- *Dawa-ul-Misk Motadil Jawahar Wali* has been used to treat *Du'f al- A'dā' Ra'isa* (weakness of vital organ), and *Khafaqān* (palpitation).
- *Dayaqooza* has been used to treat *Su'al* (cough), and *Nazla-o-Zukam* (coryza & catarrh).
- *Habb-e-Jawahar Kafoori* and *Habb-e-Jawahar Moallif* have been used to treat *Sill* (phthisis), and *Diq* (asthma).
- *Khamira Abresham Sada* has been used to treat *Du'f al- A'dā' Ra'isa* (weakness of vital organ), and *Khafaqān* (palpitation).
- *Khamira Gaozaban Ambari Jawahirwala* has been used to treat *NazlaMuzmin* (chronic coryza) and *Khafaqān* (palpitation).
- *Khamira Nazli Jawahirwala* has been used to treat *Nazla* (coryza), *Zukam* (coryza).
- *Laooq Zeequn Nafas Qawi* has been used to treat

*Dhīq al-Nafas* (asthmatic bronchitis).

- *Majoon Rahul-momineen* has been used to treat *Dīq al-Nafas* (bronchial asthma).
- *Mufarreah braid* has been used to treat *Du'f al-Qalb* (cardiac insufficiency), and *Khafaqān* (palpitation).
- *Mufarrehsosambari* has been used to treat *Du'f al-Qalb* (cardiac insufficiency).
- *Mufarreah Yaqooti Barid* has been used to treat *Du'f al-Qalb* (cardiac insufficiency), and *Naqāhat* (debility/convalescence).
- *Mufarrehyaqootimotadil* has been used to treat *Naqāhat* (debility/convalescence), *Du'f al- A'dā' Ra'isa* (weakness of vital organ), and *Khafaqān* (palpitation).
- *Sharbatdeenar* has been used to treat *Dhāt al-Janb* (pleurisy).
- *Zehbi* has been used to treat *Du'f al-Qalb* (cardiac insufficiency), and *Khafaqān* (palpitation) [48; 50; 51; 52; 53].

### Discussion

Coronavirus disease is a viral respiratory illness in which the elderly and those with medical conditions such as cardiovascular disease, diabetes, lung disease, and cancer are more likely to become seriously ill. The symptoms of COVID-19 can be classified into three categories: the more frequently such as fever, dry cough, and tiredness; the less common include aches, sore throat, diarrhea, conjunctivitis, headache, loss of taste or scent, and a rash on the skin, as well as discoloration of fingers or toes. The severe symptoms include breathing difficulties or shortness of breath, chest pain or discomfort, and speech or movement loss<sup>56</sup>.

There is no drug available for the prophylaxis and management of active COVID-19 infection, although several antiviral drugs were used during the COVID-19 pandemic. Natural drugs' success in boosting immunity during the pandemic has shown a way to discover a natural way to treat viral infections. The USM is holistic and treats the body as a unit instead of killing the virus or bacteria. The basic concept is to help the body to fight against the antigen and to restore normal homeostasis. The management of respiratory diseases in USM is given in detail, and several single and compound formulations are mentioned in the literature<sup>57</sup>.

In Unani literature, GB is indicated as a *Muhallil-*

*i-Waram* (anti-inflammatory), *Munaffith-i-Balgham* (expectorant), *Musaffi-i-Dam* (blood purifier), and *Dafi'-i-Hummiyat* (antipyretic). It is used to treat various ailments such as cough, coryza, headache, pleurisy, pneumonia, throat irritation, and complex fever<sup>41; 42; 43; 45</sup>. It possesses various pharmacological properties and has been studied for its antipyretic<sup>58</sup>, anti-inflammatory<sup>59</sup>, antioxidant, vascular protective<sup>60</sup>, neuroprotective<sup>61</sup>, antihypertensive, antidyslipidemic<sup>62</sup>, hepatoprotective<sup>63</sup> antitussive, anti-asthmatic<sup>64</sup> and antibacterial activity<sup>65</sup>.

The GG is presented as a *Muqawwi* (tonic), *Munaffith-i-Balgham* (expectorant), *Dafi'-i-Hummā* (antipyretic), and *Du'f al- A'dā' Ra'isa* (weakness of vital organ). It is used to treat asthmatic bronchitis, dry cough, palpitation, coryza, and catarrh [41; 42;45; 47]. The GG has been studied for its antioxidant<sup>66</sup>, antinociceptive<sup>67</sup>, and it has also shown anti-asthmatic activity in a clinical trial<sup>68</sup>. The GS is designated as *Dafi'-i-Ta'affun* (antiseptic), *Musakkin-i-Alam* (analgesic), *Muqawwi-i-Badan* (general tonic), *Muhallil-i-Waram* (anti-inflammatory), It is used in the management of tonsillitis, fever, irritation of the throat, headache, general weakness, palpitation, weakness of vital organ, and hemoptysis<sup>41; 45; 46; 47; 54; 55</sup>. The GS has been studied for its antioxidant<sup>69;70</sup>, antihyperglycemic<sup>71</sup>; <sup>72</sup>, analgesic, anti-inflammatory<sup>73; 74</sup>, anti-depression activity, and use in dementia<sup>75</sup>. It has also shown antibacterial potential<sup>76</sup>.

The *Muqawwi* (tonic) concept for the body and specific organs is a unique concept of the USM. The use of *Muqawwi-i-Ri'a* (lungs tonic) along with and *Muqawwi-i-Badan* (immunity booster) may be adopted as a gold standard for the management of COVID-19 infection. The *Khamira Banafsha* may be used as prophylactic for strengthening the specific organ as per need and as a therapeutic application as an adjuvant to treat mild and moderate active COVID-19 cases. The use of *Muqawwi-i-Dimāgh* (brain tonic) and *Muqawwi-i-A'sab* (nervine tonic) may be the best regime for managing psychological effects in COVID patients after recovery and in the general population.

### Conclusion

*Khamira Banafshais* a unique Unani herbal formulation that is used for respiratory ailments. It has three commonly used components that can be used individually and in formulations that treat respiratory problems. The ingredients also possess general tonic and immune-boosting activities, which may add up to its usefulness in the management of COVID-19 as a prophylactic and therapeutic application. The clinical trial for its efficacy and safety in coronavirus infection may be carried out to validate its actions and uses.

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