

Case Report

TaibUVID nutritional supplements help rapid cure of COVID-19 infection and rapid reversion to negative nasopharyngeal swab PCR: for better public prophylaxis and treatment of COVID-19 pandemic

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Abstract: Public prophylaxis to decrease the emergence of new daily COVID-19 cases is vital. Adjuvant TaibUVID nutritional supplements are promising home-made or hospital-made supplements suggested for rapidly preventing and treating COVID-19 pandemic. We report here a 44 years old male physician who caught COVID-19 infection at hospital in Egypt with confirmed positive nasopharyngeal swab PCR. Ethical committee approval and informed patient's consent were gained before performing this study. Chest X-ray revealed increased bronchovascular markings. Close follow-up was done with no treatment given and he was sent for home isolation. Few days later, he developed progressive non-productive cough and a sense of difficult breathing with no associated fever or chest pain. An antitussive drug was given to him. The patient read about TaibUVID supplements from social media and started to feel improvement after TaibUVID inhalation therapy (using the heated solution of nigella sativa and chamomile five times a day). He also received a home-made TaibUVID nutritional supplement (nigella sativa, chamomile and natural honey) five times daily for four consecutive days. The next day, he was quite better with mild symptoms. Two days later, nasopharyngeal swab PCR was negative while other patients still had positive nasopharyngeal swabs. As few attacks of mild cough and breathing difficulty existed, he was admitted to hospital. A nasopharyngeal swab PCR

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was done for him again and the result was negative also. Blood gases were normal. He had lymphocytosis (possibly due to TaibUVID effects) that counteract lymphopenia seen in COVID-19 patients. Biochemical and hematological evaluation were quite normal apart from increased serum chloride and lactate dehydrogenase. There was a mild decrease in serum CO₂ and alkaline phosphatase. Chest CT report revealed symmetrically inflated both lungs with non-specific focal nodular infiltrates (scattered in basal and medial lung segments) in left lower lobes with faint ground glass opacities. He was discharged home. Few days later, he was quite improved with no symptoms and returned to his work comfortably. In conclusion, TaibUVID nutritional supplements may be effective in rapidly changing the nasopharyngeal swab PCR from positive to negative. TaibUVID nutritional supplements are advisable as a natural, safe and effective prophylaxis to stop COVID-19 infectiousness, transmission and emergence of new cases. Clinical studies to investigate TaibUVID nutritional benefits are strongly recommended. TaibUVID may be promising and recommended for public prophylaxis to decrease emergence of new COVID-19 cases.

Keywords: COVID-19, TaibUVID, nigella sativa, chamomile, natural honey, nasopharyngeal swab PCR

Introduction

COVID-19 infection is a life-threatening pandemic that emerged in Wuhan, China and disseminated rapidly throughout China and the world [1]. The World Health Organization (WHO) had announced that novel coronavirus (COVID-19) infection is a global pandemic on March 12, 2020. COVID-19 causes severe respiratory tract infections in humans. COVID-19 virus has a 60-140 nm size and can be transmitted by droplets and contaminated hands or surfaces. Airborne transmission is evident in human secretions e.g. nasopharyngeal/saliva droplets of infected persons. Unfortunately, suitable filter standards or special filter technologies are still lacking [2]. COVID-19 infection can be transmitted through respiratory droplets resulting in fever, dry cough, shortness of breath, anorexia, fatigue, sore throat [3], expectoration, fatigue, dry cough and/or myalgia [4]. Old age, malnutrition, bacterial infections and comorbidities (hypertension, diabetes, etc.) are the main risk factors for death of COVID-19 pneumonia and related mortality. Moreover, increased neutrophils, D-dimer and lactate dehydrogenase levels with decreased lymphocytes counts are important markers denoting disease progression [5].

Till December 30th, 2020, the pandemic afflicted more than 82.1 million cases with 46.6 million recovered cases and over 1.79 million deaths. World countries exert big efforts to face COVID-19 pandemic. Among the best success examples is Saudi Arabia. Saudi government and health authorities deserve sincere appreciation for their transparency and providing a high standard of medical care for all people (citizens and non-citizens equally) for free that helps decreasing death rates to the minimum much below the international standards.

Increased levels of IL-6, CRP and hypertension are independent risk factors for the severity of COVID-19 with IL-6 playing an important role in assessing severe cases i.e. having cytokines storm [6]. In severe COVID-19 patients, inflammatory markers as C-reactive protein, IL-6, D-dimer, serum ferritin and lactate dehydrogenase are increased in many patients [7]. Till now, since the emergence of COVID-19 pandemic, there is no preventive vaccine or therapeutics currently available to stop COVID-19 virus replication, enhance immunity or exert tissue-protective effects. Presence of comorbidities as hypertension, diabetes mellitus, cardiovascular and cerebrovascular diseases among patients with COVID-19 may negatively impact or worsen COVID-19 prognosis [7].

Systematic reviews and meta-analyses (highest level of research evidence) confirmed the evidence-based therapeutic benefits of nigella sativa, chamomile and honey (**Figures 1 and 2**) in treating many human diseases without side effects. Systematic reviews confirm that nigella sativa improves glycemic control in diabetics [8], improves blood pressure control [9], decreases inflammation, decreases CRP, inhibits oxidative stress, and modulates the immune system in inflammatory conditions and rheumatoid arthritis [10, 11]. Chamomile exerts antioxidant, antimicrobial, anti-inflammatory, antidiarrheal activities, anticarcinogenic, hepatoprotective, and antidiabetic effects. Chamomile is beneficial for knee osteoarthritis, ulcerative colitis, premenstrual syndrome, and gastrointestinal disorders [12]. Natural honey exerts antioxidant (tissue-protective) effects and is promising for treating gastric ulcer [13] i.e. such natural products are reported to successfully treat comorbidities e.g. diabetes mellitus, obesity, rheumatoid arthritis. This may be promising in treating COVID-19 comorbidities. Recently,



Figure 1. TaibUVID Plus nutritional therapy used by the patient and helped rapid recovery included: -Orange juice; -Nigella sativa/chamomile/honey for chewing and swallowing; -Nigella sativa/chamomile decoction solution for inhalation.

we suggested TaibUVID nutritional supplements as a promising home-made adjuvant nutritional supplement for COVID-19 pandemic [14]. TaibUVID nutritional supplements include TaibUVID (composed of nigella sativa, anthemis hyalina and natural honey), TaibUVID Plus (composed of oral TaibUVID and TaibUVID inhalation therapy using the heated solution of nigella sativa, costus and chamomile) [14] and TaibUVID Forte (composed of nigella sativa, anthemis hyalina, natural honey, costus, senna and fennel) (Tables 1, 2). TaibUVID components are natural, quite safe to patients and are not reported to disturb the therapeutic effects of given medications (Figure 1). Inhalation of the heated solution of nigella sativa and chamo-

mile was reported to improve lung function in asthmatic patients [15].

Many potent antiviral ingredients are present in both nigella sativa and anthemis (chamomile). Nigella sativa is rich in α -pinene, β -pinene, limonene, camphor, carvacrol and thymol [16, 17]. Same ingredients are also available in anthemis hyalina [18]. α -pinene, β -pinene and limonene exert potent antiviral effects [19]. Moreover, camphor, carvacrol and thymol exert potent antiviral and antibacterial effects [20]. Natural honey exerts evident antiviral effects. Natural honey also exerts antibacterial, antioxidant, antimicrobial, anti-inflammatory and tissue-protective effects. Antiviral effects of natural honey were comparable to acyclovir for antiviral treatment of herpetic lesions [21].

In this case study, we report that a COVID-19 positive patient rapidly improved one day after using TaibUVID nutritional therapy as a sole treatment. After two days, he reverted to negative nasopharyngeal swab PCR. It may be advisable to use TaibUVID nutritional supplements as public prophylaxis and to potentiate isolation efforts of COVID-19 positive cases.

Case report

Ethical committee approval and informed patient's consent were gained for performing this study (from the Center of Scientific Foundation for Experimental Studies and Research, Ismailia, Egypt in March 30th, 2020). Components of TaibUVID nutritional supplements e.g. nigella sativa, anthemis hyalina (chamomile) and natural honey, costus, senna and fennel are available in Egypt (Table 1). We report here a 44 years old male patient. He is an Egyptian physician who caught COVID-19 infection at hospital. Urgent nasopharyngeal

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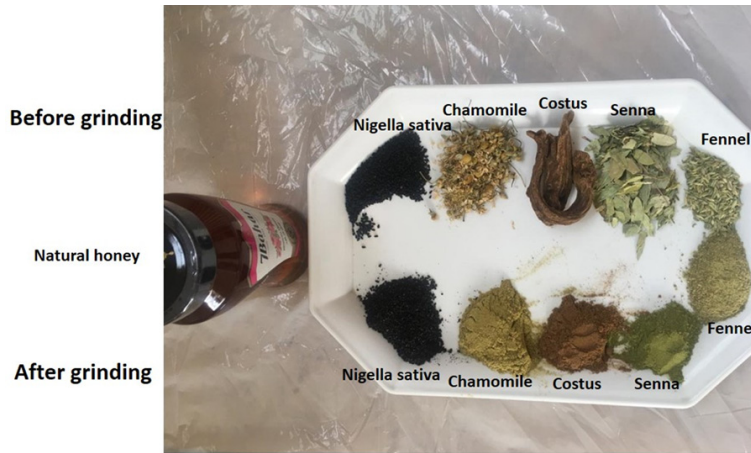


Figure 2. Components of TaibUVID Forte. One TaibUVID Forte dose (**Table 1**) equals one TaibUVID dose plus 0.5 gram costus, 0.5 gram fennel and 0.5 gram senna. This is to be mixed well, chewed and swallowed. Senna is a laxative. If diarrhea is disliked, senna dose can be reduced or omitted. Senna is recommended for at least the 1st three days when treating COVID-19 patients. Emodin (of senna) blocks the spike protein of SARS-COV-2 virus and may block its attachment to target cells i.e. this reduces SARS-COV-2 infectivity.

swab PCR was positive for COVID-19 infection with no symptoms. Chest X-ray was quite normal apart from increased bronchovascular markings. He received home isolation and close follow-up. Few days later, he developed a progressive non-productive cough and a sense of difficult breathing with no associated fever or chest pain. He received antitussive medication. He read about suggested TaibUVID nutritional supplements in social media. He prepared a home-made TaibUVID nutritional supplement (nigella sativa, anthemis hyalina and natural honey) in addition to TaibUVID inhalation therapy (nigella sativa and chamomile decoction solution five times daily for 4 consecutive days). He started to get rapid improvement of respiratory symptoms upon inhalation therapy. The next day after starting TaibUVID nutritional supplements and inhalation therapy, he felt a dramatic improvement of cough and breathing difficulty. Two days later, a second nasopharyngeal swab was done for PCR and it was negative. Few attacks of mild cough and breathing difficulty existed. He was admitted to hospital. A third nasopharyngeal swab PCR was repeated for him and the result was negative also. Blood gases were normal. He had lymphocytosis (possibly due to TaibUVID effects that counteract lymphopenia seen in COVID-19 patients). Biochemical and

hematological evaluations were done for him. All investigations were quite normal apart from a mild increase in serum chloride and lactate dehydrogenase. There was a mild decrease in serum CO₂ and alkaline phosphatase. Chest CT report revealed symmetrically inflated both lungs with no cavities or masses but there were non-specific focal nodular infiltrates (scattered in basal and medial segments) in left lower lobes with faint ground glass opacities. Major airways were patent. He was discharged home. He administered one TaibUVID dose daily for prophylaxis. Few days later, he was quite improved with no symptoms. He returned to his work comfortably.

Discussion

Characteristic hematological changes as lymphopenia are seen in severe cases of COVID-19 pandemic i.e. this may indicate decreased T helper cells and B cells, monocytes, eosinophils, and basophils counts while causing increased neutrophils counts and neutrophil-lymphocyte ratio. Decreased levels of T-lymphocytes reflect impaired cell-mediated immunity. Most of severe COVID-19 cases demonstrated elevated levels of infection-related biomarkers and inflammatory cytokines [4].

Recently, we suggested using TaibUVID nutritional supplements (nigella sativa, chamomile and honey) as effective economic preventive and therapeutic adjuvants for COVID-19 infection to minimize morbidity and case fatality. Based on reported therapeutic benefits of TaibUVID components [8-13], TaibUVID components may antagonize the clinical, hematological and laboratory pictures induced by SARS-COV-2 virus. Both nigella sativa and chamomile inhibited coronaviruses replication maximally [22]. This can be explained by the fact that all TaibUVID components are rich in antiviral agents that exert potent antiviral effects [19-21].

The patient read about Taib-UVID from social media and received TaibUVID home treatment.

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Table 1. Home-made (or hospital-made) TaibUVID nutritional supplements

Home-made or hospital-made TaibUVID nutritional supplements

N.B. TaibUVID nutritional supplements can be prepared at home or hospitals' kitchens.

A. Large TaibUVID mix preparation (about 30 doses):

One large TaibUVID mix equals:

- 2 large tablespoons of Chamomile powder (about 30 grams).
- 4 large tablespoons of Nigella sativa powder (about 60 grams).

Mix the powder well:

- Add 500 grams natural honey and mix well.

-One dose of TaibUVID equals one large table spoonful (or 1.5 large disposable plastic spoonfuls).

-It is recommended to put TaibUVID dose in a cup of warm water to dissolve while squeezing a fresh lemon or orange with it. Give to patient.

B. Large TaibUVID Forte mix preparation (about 30 doses):

One TaibUVID stock mix equals:

- 2 large tablespoons of grinded Chamomile powder (about 30 grams).
- 2 large tablespoons of fennel powder (about 30 grams).
- 1 large tablespoon of costus powder (about 15 grams).
- 1 small - 1 large tablespoon of senna powder (about 5 - 15 grams).
- 4 large tablespoon of nigella sativa powder (about 60 grams).

Mix the powder well:

- Add 500 grams natural honey and mix well.

-One dose of TaibUVID Forte equals one large metal table spoonful (or 1.5 large disposable plastic spoonfuls).

-It is recommended to put TaibUVID Forte dose in a cup of warm water to dissolve while squeezing a fresh lemon or orange with it. Give to patient.

N.B.

-One TaibUVID Forte dose = One TaibUVID dose, 0.5 gram Costus, 0.5 gram Fennel, 0.5 gram Senna. Mixing well, chewing and swallowing.

-Senna is a laxative. If diarrhea is disliked, senna dose can be reduced or omitted. Senna is recommended for at least the 1st three days when treating COVID-19 patients. Emodin (of senna) blocks the spike protein of SARS-COV-2 virus and may block its attachment to target cells i.e. reduces infectivity.

Antitussive drugs alone cannot explain the rapid clinical improvements and the rapid reversion to negative nasopharyngeal swab PCR. Patient's improvement occurred rapidly and is unlikely to be spontaneous. Patient's improvement is likely to be a TaibUVID effect. Negative nasal swab PCR may suggest TaibUVID-induced virus clearance. Unfortunately, many physicians may discourage the use of natural products and medicinal plants as adjuvant supplements as this was not studied in medical schools. However, modern research studies strongly confirm the evidence-based therapeutic benefits of the components of TaibUVID nutritional supplements in the management of many human diseases [8-13] that may be faced as co-morbidities in COVID-19 patients.

One TaibUVID Forte dose (**Table 1**) equals one TaibUVID dose plus 0.5 gram costus, 0.5 gram

fennel and 0.5 gram senna. This is to be mixed well, chewed and swallowed. However, senna is a laxative. If diarrhea is disliked, senna dose can be reduced or omitted. Senna is recommended for at least the 1st three days when treating COVID-19 patients. Emodin (of senna) blocks the spike protein of SARS-COV-2 virus and may block its attachment to target cells i.e. this reduces SARS-COV-2 infectivity.

Unfortunately, in this case study, all radiological and laboratory investigations (apart from chest X-ray denoting increased bronchovascular markings) were done after getting the 2nd negative nasopharyngeal swab PCR at hospital. No previous radiological or laboratory investigations were done for comparison. Chest CT was done for him and revealed non-specific focal nodular infiltrates (scattered in basal and medial lung segments) in left lower lobes with faint

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Table 2. TaibUVID Plus (= oral TaibUVID + TaibUVID inhalation therapy)

TaibUVID inhalation therapy

Indications: (given 5 times per day) whenever there is:

1. Moderate and severe cases of COVID-19 infection.
2. Presence of respiratory symptoms (e.g. cough, wheezes, difficult breathing, decreased oxygen saturation).
3. Presence of associated pulmonary diseases (e.g. asthma, pneumonia, bronchitis...).

Two therapeutic inhalation solutions can be prepared:

A. Nigella sativa oil/saline inhalation solution:

Add 1/2 ml nigella sativa oil to 3-6 ml normal saline...Use via a nebulizer.

B. Nigella/Anthemis/costus inhalation solution:

In a clean small container, put:

- Nigella sativa seeds (one large spoonful).
- Anthemis hyalina (one large spoonful).
- Grinded costus powder (one small spoonful).
- 500 ml water.

All mix components should be boiled for 5 minutes. Resultant hot water is cooled up. Remove seeds and put 5 ml in nebulizer.

N.B.

- For public prophylaxis: 1-2 doses of TaibUVID or TaibUVID Forte/day.
- For COVID-19 contacts and physicians: 2 doses of TaibUVID or TaibUVID Forte/day.
- For patients: 5 doses of TaibUVID or TaibUVID Forte/day.
- Nebulization session should be 15 minutes per session 4-5 times/day.
- Always use a fresh solution (not older than 12 hours).

N.B. Remaining amount of Nigella/Anthemis/costus inhalation solution should better be put in a spray bottle for spraying patient room, hospital wards and isolation places.

ground glass opacities. This picture is commonly seen in COVID-19 patients and may remain for a time after patient recovery. All biochemical parameters in serum and all hematological parameters were normal apart from mild increases in serum chloride and lactate dehydrogenase (**Tables 2-4**). There was a mild decrease in serum CO₂ and alkaline phosphatase. D-dimer and C-reactive protein were quite normal after getting the 2nd negative nasopharyngeal swab PCR (**Table 3**). Interestingly, hematological parameters were also quite normal apart from a mild increase in lymphocytes count (lymphocytosis). That clearly counteracts COVID-19-induced lymphopenia [4]. This is most likely to result from the effects of both nigella sativa and honey [23, 24].

It may be argued that majority of COVID-19 patients may improve due to pharmacological protocols only. In this case report, no pharmacological protocol was given (apart from anti-tussive drug) to explain the rapid clinical improvement in clinical picture and the rapid reversion to negative nasopharyngeal swab PCR. It may be argued that many COVID-19 patients may spontaneously improve through home isolation even without treatment and that the improvement seen in many patients can-

not be attributed to the suggested nutritional supplements. In fact, given nutritional supplements had played a significant role in patients' improvements. We also recommend considering the suggested nutritional supplements as part of the food and nutrition given to patients. Therapeutic benefits gained by this patient may be wholly attributed to TaibUVID supplements. Such benefits are better than nothing as long as suggested nutritional supplements are cheap, safe (no side effects), available and are not reported to interfere with the given medications. Definitely, nutritional supplements may be a major and vital part of the treatment plan and should never be overlooked. Nigella sativa and honey enhance immunological functions [23, 24]. Nigella sativa and chamomile were reported to inhibit the replication of coronaviruses in vitro [22]. Nigella sativa, chamomile and honey were reported to exert tissue-protective effects to different body tissues and organs [8-13]. On the other hand, given pharmacological treatments (e.g. chloroquine, hydroxychloroquine, azithromycin...) have no reported immune potentiating, antiviral or tissue-protective effects. So, for COVID-19 patients' safety, TaibUVID nutritional supplements may better be taken as adjuvants to

Table 3. Biochemical parameters after 2nd negative nasopharyngeal swab PCR

Parameter	Value
ALT (GPT) (7-55 U/L)	10
AST (GOT) (8-48)	19
Serum total bilirubin (< 21 µM/L)	14.3
Serum albumin (37-50 g/L)	44
Serum total protein (66-83 g/L)	44
Blood Urea nitrogen (2.8-7.3 mM/L)	5.8
Serum creatinine (64-111 µM/L)	90
Serum sodium (135-145 mM/L)	140
Serum potassium (3.5-5.1 mM/L)	4.3
Serum chloride (98-107 mM/L)	110
Anion gap (7-15 mM/L)	11
D-Dimer (0.17-0.64 Mg/L Feu)	0.33
C-reactive protein (mg/L)	< 1
Lactate dehydrogenase (125-220 U/L)	229
Serum CO ₂ (22-29 mM/L)	19
Alkaline phosphatase (50-116 U/L)	32

Table 4. Complete blood picture of the patient after 2nd negative nasopharyngeal swab PCR

Parameter	Value
RBCs count (4.5-5.9 million/cc)	5.22
WBCs count (3.3-10.8 thousands/cc)	7.09
Hemoglobin (13.5-17.5 g/dL)	14.5
Hematocrit value (41-53%)	45.8
Platelets count (150-500 thousands/cc)	197
Mean corpuscular volume (80-100 fL)	87.8
Mean corpuscular hemoglobin (23.7-32 pg)	27.7
Mean corpuscular hemoglobin concentration (31.4-37.5%)	31.5
Red cell distribution width (11.8-15.5%)	13.4
Mean Platelet volume (7.4-10.4 fL)	7.75
Absolute Neutrophils count (2-7.5 ×10 ⁹)	2.75
Neutrophils count (% Percentage) (40-75)	38.8
Absolute Basophils count (0-0.2 ×10 ⁹)	0.015
Basophils Percentage (%) (0-2%)	0.206
Absolute eosinophils count (0-0.4 ×10 ⁹)	0.209
Eosinophils Percentage (%) (0-4%)	2.94
Absolute Monocytes count (0.2-0.8 ×10 ⁹)	0.669
Monocytes Percentage (%) (2-10%)	9.43%
Absolute Lymphocytes count (1.5-4 ×10 ⁹)	3.45
Lymphocytes Percentage (%) (20-45%)	48.6

pharmacological treatments. If some patients may improve spontaneously without treatment, this is not the case for all COVID-19 patients. Therapeutic benefits gained after using phar-

macological treatments (e.g. chloroquine, hydroxychloroquine, azithromycin...) cannot be attributed to any drug except after performing comparative clinical studies. Pharmacological protocols (under close medical supervision) should be performed as decided by health authorities.

For us, pharmacological treatments are the gold standard that should better to be supported by TaibUVID nutritional supplements (Table 5). Taking into account the serious side effects exerted by many pharmacological treatments versus the reported tissue-protective effects exerted by components of TaibUVID nutritional supplements [8-13], TaibUVID nutritional supplements may be strongly recommended for patients' safety. As long as there is no effective prophylactic agents to break the infection cycle and prevent the emergence of new COVID-19 cases, TaibUVID nutritional supplements given to all the public (at the same time) may be strongly recommended for increasing public immunity and decreasing the emergence of new COVID-19 cases. Safety and antiviral effects reported with components of TaibUVID nutritional supplements may recommend their use for treating COVID-19 cases (at home and hospital) and as a nutritional prophylaxis to decrease virus infectiousness and the emergence of new COVID-19 cases.

Our previous experience with *nigella sativa* treatment confirms its immunological benefits to thalassemic children (having impaired immunity). *Nigella sativa* caused increased white blood cells count, neutrophil count, CD4 T help-

er cells count and CD8 T-cytotoxic cells count [24]. CD4 cells orchestrate the immunity against viruses while CD8 cells kill virus-infected cells (the cellular machinery helping viral repli-

Table 5. Potential therapeutic benefits of TaibUVID nutritional supplements. That may be helpful for COVID-19 patients

potential therapeutic benefits of TaibUVID nutritional supplements for COVID-19 patients

- May eradicate contacts.
 - May prevent infectiousness to healthy subjects.
 - May potentiate patients' isolation efforts done by health authorities.
 - Contains potent antiviral ingredients as thymoquinone, carvacrol and thymol.
 - May save human lives and minimize mortality.
 - May antagonize pathological effects induced by COVID-19 infection.
 - May be used as a sole or adjuvant treatment.
 - Quite safe, cheap and welcomed by the public.
 - Quite available and tissue-protective with potent antiviral effects.
 - Does not interfere with given pharmacological COVID-19 therapeutics.
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cation). We also reported that nigella sativa significantly decreased oxidative stress (and consequently related tissue damage) while increasing the total antioxidant capacity (tissue-protective effects) [24]. More interestingly, nigella sativa proved effective in decreasing coronaviruses replication by more than 90% in in-vitro cultures while anthemis hyalina caused 100% inhibition of coronaviruses replication [22].

Interestingly, nigella sativa is rich in copper [25]. Copper is involved in the functions of critical immune cells such as T helper cells, B cells, neutrophils, natural killer cells, and macrophages that exert potent antiviral immunological effects. Copper-deficient humans are vulnerable to infections due to the decreased number and function of these blood cells. Copper was effective against many infectious viruses e.g. bronchitis virus, poliovirus and human immunodeficiency virus type-1 [26]. Human coronaviruses were rapidly inactivated on a range of copper alloys (within a few minutes for simulated fingertip contamination) and copper/zinc brasses were very effective at lower copper concentration [27].

Natural honey participates in reversing the hematological picture caused by COVID-19 infection via inducing a mitogenic effect on both B- and T-lymphocytes i.e. honey increases lymphocytes proliferation and numbers [23]. Honey is promising in treating co-morbidities that may be associated with COVID-19 patients e.g. diabetes and hyperlipidemia that may accelerate the poor outcomes. HbA1c levels were significantly reduced, and HDL-cholesterol was significantly increased in honey-fed rats

compared with sucrose-fed or a sugar free diet [28].

Interestingly, decreased serum CO₂ in this patient (**Table 3**) may be related to COVID-19 outcomes. Decreased serum CO₂ in COVID-19 patients is an important prognostic factor that is reported to correlate negatively with 28-day mortality in patients with sepsis [29]. Fortunately, this did not happen and the patient's condition improved with the nutritional supplements. Moreover, a mild increase in serum LDH may reflect a mild degree of tissue damage due to COVID-19 infection. Persistence of such changes for almost a week following initiation of TaibUVID nutritional treatment may indicate that nutritional treatment should better be continued for a while after gaining a negative nasopharyngeal swab PCR for completing the tissue-protective effects.

Conclusion

In conclusion, definite cure of COVID-19 may take few days after nasopharyngeal swab PCR becomes negative. Immune potentiating and tissue-protective effects of TaibUVID nutritional supplements may be promising for a rapid recovery in COVID-19 cases [30] with many promising therapeutic benefits for COVID-19 patients (**Table 5**). Many therapeutic benefits may be gained when treating COVID-19 infection with TaibUVID nutritional supplements (**Tables 1, 2**). TaibUVID supplements may be safe, economic, available and effective adjuvant or sole treatment for COVID-19 infection that may help a rapid eradication of COVID-19 infection by changing the nasopharyngeal swab

PCR from positive to negative. As there is no prophylactic treatment for COVID-19 pandemic, TaibUVID nutritional supplements are advisable to be taken as a public prophylaxis to decrease the emergence of new daily COVID-19 positive cases. TaibUVID nutritional supplements may be advisable as a natural, safe and effective prophylaxis to stop COVID-19 infectiousness and transmission. Clinical studies to furtherly investigate TaibUVID nutritional benefits are strongly recommended. TaibUVID nutritional supplements may be promising and recommended for public prophylaxis, home treatment and hospital treatment.

Disclosure of conflict of interest

None.

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References

- [1] Wang Y, Ma J, Wang S, Zeng Y, Zhou C, Ru Y, Zhang L, Lu Z, Wu M and Li H. Utilizing integrating network pharmacological approaches to investigate the potential mechanism of Ma Xing Shi Gan Decoction in treating COVID-19. *Eur Rev Med Pharmacol Sci* 2020; 24: 3360-3384.
- [2] Leung WWF and Sun Q. Electrostatic charged nanofiber filter for filtering airborne novel coronavirus (COVID-19) and nano-aerosols. *Sep Purif Technol* 2020; 250: 116886.
- [3] Ozma MA, Maroufi P, Khodadadi E, Köse Ş, Esposito I, Ganbarov K, Dao S, Esposito S, Dal T and Kafil HS. Clinical manifestation, diagnosis, prevention and control of SARS-CoV-2 (COVID-19) during the outbreak period. *Infez Med* 2020; 28: 153-165.
- [4] Qin C, Zhou L, Hu Z, Zhang S, Yang S, Tao Y, Xie C, Ma K, Shang K, Wang W and Tian D. Dysregulation of immune response in patients with COVID-19 in Wuhan, China. *Clin Infect Dis* 2020; 71: 762-768.
- [5] Li X, Wang L, Yan S, Yang F, Xiang L, Zhu J, Shen B and Gong Z. Clinical characteristics of 25 death cases with COVID-19: a retrospective review of medical records in a single medical center, Wuhan, China. *Int J Infect Dis* 2020; 94: 128-132.
- [6] Zhu Z, Cai T, Fan L, Lou K, Hua X, Huang Z and Gao G. Clinical value of immune-inflammatory parameters to assess the severity of coronavirus disease 2019. *Int J Infect Dis* 2020; 95: 332-339.
- [7] Carboni E, Carta AR and Carboni E. Can pioglitazone be potentially useful therapeutically in treating patients with covid-19? *Med Hypotheses* 2020; 140: 109776.
- [8] Hamdan A, Haji Idrus R and Mokhtar MH. Effects of nigella sativa on type-2 diabetes mellitus: a systematic review. *Int J Environ Res Public Health* 2019; 16: 4911.
- [9] Sahebkar A, Soranna D, Liu X, Thomopoulos C, Simental-Mendia LE, Derosa G, Maffioli P and Parati G. A systematic review and meta-analysis of randomized controlled trials investigating the effects of supplementation with nigella sativa (black seed) on blood pressure. *J Hypertens* 2016; 34: 2127-2135.
- [10] Tavakoly R, Arab A, Vallianou N, Clark CC, Hadi A, Ghaedi E and Ghavami A. The effect of nigella sativa L. supplementation on serum C-reactive protein: a systematic review and meta-analysis of randomized controlled trials. *Complement Ther Med* 2019; 45: 149-155.
- [11] Khabbazi A, Javadi Z, Seyedsadjadi N and Mahdavi AM. A systematic review of the potential effects of nigella sativa on rheumatoid arthritis. *Planta Med* 2020; 86: 457-469.
- [12] Miraj S and Alesaeidi S. A systematic review study of therapeutic effects of *Matricaria recuita* chamomile (chamomile). *Electron Physician* 2016; 8: 3024-3031.
- [13] Fazalda A, Quraisiah A and Nur Azlina MF. Anti-ulcer effect of honey in nonsteroidal anti-inflammatory drugs induced gastric ulcer model in rats: a systematic review. *Evid Based Complement Alternat Med* 2018; 2018: 7515692.
- [14] El Sayed SM, Almaramhy HH, Aljehani YT, Okashah AM, El-Anzi ME, AlHarbi MB, El-Tahlawi R, Nabo MMH, Aboonq MS, Hamouda O and Alhadramy O. The evidence-based TaibUVID nutritional treatment for minimizing COVID-19 fatalities and morbidity and eradicating COVID-19 pandemic: a novel approach for better outcomes (a treatment protocol). *Am J Pub Health Res* 2020; 8: 54-60.
- [15] Al-Jawad FH, Al-Razzuqi RA, Hashim HM and Ismael AH. Broncho-relaxant activity of nigella sativa versus anthemisnobilis in chronic bronchial asthma; a comparative study of efficacy. *IOSR J Pharm* 2012; 2: 81-83.
- [16] Sarwar A and Latif Z. GC-MS characterisation and antibacterial activity evaluation of Nigella sativa oil against diverse strains of Salmonella. *Nat Prod Res* 2015; 29: 447-451.

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- [17] Zihlif MA, Mahmoud IS, Ghanim MT, Zreikat MS, Alrabadi N, Imraish A, Odeh F, Abbas MA and Ismail SI. Thymoquinone efficiently inhibits the survival of EBV-infected B cells and alters EBV gene expression. *Integr Cancer Ther* 2013; 12: 257-263.
- [18] Rustaiyan A, Masoudi M, Danaei E, Taherkhani M and Aghajani Z. Composition of the essential oils of *Anthemis hyalina* DC. *Achillea nobilis* L. and *Cichorium intybus* L. Three asteraceae herbs growing wild in Iran. *J Essent Oil Bear PI* 2012; 24: 472-480.
- [19] Astani A and Schnitzler P. Antiviral activity of monoterpenes beta-pinene and limonene against herpes simplex virus in vitro. *Iran J Microbiol* 2014; 6: 149-155.
- [20] Swamy MK, Akhtar MS and Sinniah UR. Antimicrobial properties of plant essential oils against human pathogens and their mode of action: an updated review. *Evid Based Complement Alternat Med* 2016; 2016: 1-21.
- [21] Yaghoobi R and Kazerouni O. Evidence for clinical use of honey in wound healing as an antibacterial, anti-inflammatory anti-oxidant and anti-viral agent: a review. *Jundishapur J Nat Pharm Prod* 2013; 8: 100-104.
- [22] Ulasli M, Gurses SA, Bayraktar R, Yumrutas O, Oztuzcu S, Igci M, Igci YZ, Cakmak EA and Arslan A. The effects of *nigella sativa* (Ns), *anthemis hyalina* (Ah) and *citrus sinensis* (Cs) extracts on the replication of coronavirus and the expression of TRP genes family. *Mol Biol Rep* 2014; 41: 1703-1711.
- [23] Abuharfeil N, Al-Oran R and Abo-Shehada M. The effect of bee honey on the proliferative activity of human B-and T-lymphocytes and the activity of phagocytes. *Food Agric Immunol* 1999; 11: 169-177.
- [24] El-Shanshory M, Hablas NM, Aboonq MS, Fakhreldin AR, Attia M, Arafa W, Mariah RA, Baghdadi H, Ayat M, Zolaly M, Nabo MMH, Al-maramhy HH, El-Sawy SA, Zidan M, Elshazley M, Alharbi R, Mostafa S, Abou El-Naga M and El Sayed SM. *Nigella sativa* improves anemia, enhances immunity and relieves iron overload-induced oxidative stress as a novel promising treatment in children having beta-thalassemia major. *J Herb Med* 2019; 16: 100245.
- [25] Yimer EM, Tuem KB, Karim A, Ur-Rehman N and Anwar F. *Nigella sativa* L. (black cumin): a promising natural remedy for wide range of illnesses. *Evid Based Complement Alternat Med* 2019; 2019: 1-16.
- [26] Raha S, Mallick R, Basak S and Duttaroy AK. Is copper beneficial for COVID-19 patients? *Med Hypotheses* 2020; 142: 109814.
- [27] Warnes SL, Little ZR and Keevil CW. Human coronavirus 229E remains infectious on common touch surface materials. *mBio* 2015; 6: e01697-15.
- [28] Chepulis L and Starkey N. The long-term effects of feeding honey compared with sucrose and a sugar-free diet on weight gain, lipid profiles, and DEXA measurements in rats. *J Food Sci* 2008; 73: 1-7.
- [29] Kim JH, Jang DH, Jo YH, Suh GJ, Kwon WY, Lee JH, Shin J, Park I, Lee CU and Lee SM. Serum total carbon dioxide as a prognostic factor for 28-day mortality in patients with sepsis. *Am J Emerg Med* 2020; 2020: S0735-6757(20)30234-5.
- [30] El Sayed SM, Aboonq MS, El Rashedy AG, Aljehani YT, Abou El-Magd RM, Okashah AM, El-Anzi ME, Alharbi MB, El-Tahlawi R, Nabo MMH, Yousef RS, Elshazley M, Abu-Elnaga M, Mahmoud HS, El-Alaf H, Abdelrahman AI, Abdel-Gawad AR and Soliman TM. Promising preventive and therapeutic effects of TaibUVID nutritional supplements for COVID-19 pandemic: towards better public prophylaxis and treatment (A retrospective study). *Am J Blood Res* 2020; 10: 266-282.