Preventive impact of traditional medicine against covid-19

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ABSTRACT
Globally, SARS-Cov-2 continues to spread, causing widespread panic. Finding a cure to stop its spread has become a top priority. The use of chloroquine has been the subject of much debate in the scientific community around the world. The Scientific Committee of Morocco decided to use it to treat cases infected with covid 19. However, treatment depends on the health of each patient’s immune system. It is necessary to strengthen the immune system to protect itself or prevent possible infections, such as colds, fever, pain, shortness of breath and sore throat, symptoms similar to those of SARS-Cov-2 virus. An infusion, prepared in a traditional way from certain plants such as thyme, lemon, ginger, with a supplement of honey, is used by the Moroccan population to strengthen the immune system during the winter period to fight against colds, fever, pain, shortness of breath and sore throat symptoms similar to those of SARS-Cov-2. Thus, this infusion can be used to naturally strengthen the body’s immunity because it contains a significant amount of vitamin C, zinc, quercetin, bioactive substances called essential for the proper functioning of cellular metabolism against pathogens and possibly the famous SARS-Cov-2.

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Medicinal plant,
SARS-Cov-2,
Covide 19.

1. Introduction:
Currently, a therapeutic solution is needed to stop the spread of the new coronavirus 2019 (known as SARS-Cov-2) [1]. Statistical and scientific studies have shown that the pandemic is gaining ground around the world and that individuals infected with Covid 19 have the same symptoms as rum or flu (fever, cough, shortness of breath, tiredness, headache, diarrhea and expectoration) [2-3]. Morocco, for its part, has to deal with several victims contaminated first by the arrival of infected people from abroad, then by the appearance of "epidemic outbreaks", that is to say "zones of active circulation of the virus", also known as clusters in the professional sectors and in Moroccan families [4] and within Moroccan families, traditional phytotherapy (use of medicinal and aromatic plants) extremely developed in the treatment of several infectious diseases [5]. Nowadays, the traditional use of these plants continues to develop. It provides an opportunity to treat by avoiding excessive use of antibiotics [6-7]. Thus, the rapid spread of Covid 19 leaves researchers with no choice but to find an effective remedy and to take all necessary and essential measures to fight and stop the transmission of Covid 19 [8]. In order to contribute to this collaborative effort to prevent this pandemic, we present a natural treatment commonly used by the Moroccan population for generations.
This treatment would help fight fever, cough, diarrhea, shortness of breath, tiredness, headache, and sputum; the main symptoms generally observed in patients affected by the Covid-19 pandemic. The mitigation of these symptoms, similar to
those of Covid-19, would be necessary to help the body to react favourably by activating its immune system against SARS Cove 2 viruses. This is a treatment based on a mixture of three medicinal plants including lemon, ginger and thyme in combination with honey [9].

2. Material and methods:
The traditional use of plants such as thyme, ginger, lemon and honey in the treatment of dry cough, fever and even to strengthen immunity in order to allow the organism to defend itself is common among the Moroccan population. The medicinal use of the combination of these plants with honey is known in different ways but we have chosen for the most realistic method for the desired treatment that is to say to fight and prevent rum, flu diseases with symptoms similar to those of Covi-19. The method consists in preparing an oral administration drink as the following one. Materials and quantities used: one cleaned lemon, one large spoon of thyme, one small teaspoon of grated fresh ginger, two large spoons of organic honey, 250 ml of water, and two large bowls.

Method: Put thyme and then the grated fresh ginger in the bowl. Boil the 250 ml of water and pour it directly over the whole then leave to rest for at least 2 hours (do not forget to cover the bowl). Once the 2 hours have left, one can filter the mixture (thym and ginger) and put everything in a pan and cook over low heat (our infusion must be hot). Remove the mixture from the heat and let it cool during the preparation of the lemon. Grind the whole lemon, sift everything, collect the juice and add it to our infusion. The infusion is ready now; add 1 or 2 spoons of organic honey. The lemon juice and honey are not heated in order to preserve their beneficial effects. The dose used is the sufficient and necessary amount in ml and oral intake is 1 to 2 times a day (morning and / or evening) as needed.

3. Results and discussions:
On 12 January 2020, a new coronavirus was responsible for respiratory disease in a group of people in Wuhan, Hubei Province, China, which was reported to the WHO on 31 December 2019 Covid-19, mortality was much lower than SARS in 2003, but transmission was significantly higher, with a significant total number of deaths. The data recovered on July 14, 2020 at 7:30 p.m. internationally [10]. The coronavirus is responsible for the ‘covid-19’ pandemic that first appeared in the Chinese city of Wuhan in China and spread across the globe. To date, we have 137613 deaths in the United States, 28406 in Spain, 34967 in Italy, 9138 Germany, 44830 United Kingdom, 30029 in France (table 1).

Table 1. Data recovered on July 14, 2020 at 7:30 p.m. internationally.

<table>
<thead>
<tr>
<th>Country</th>
<th>Contaminated</th>
<th>Deaths</th>
<th>Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>3428462</td>
<td>137613</td>
<td>999968</td>
</tr>
<tr>
<td>Spain</td>
<td>255953</td>
<td>28406</td>
<td>150376</td>
</tr>
<tr>
<td>Italy</td>
<td>243230</td>
<td>34967</td>
<td>195106</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>291373</td>
<td>44830</td>
<td>No data</td>
</tr>
<tr>
<td>Germany</td>
<td>200431</td>
<td>9138</td>
<td>185058</td>
</tr>
<tr>
<td>France</td>
<td>172377</td>
<td>30029</td>
<td>78597</td>
</tr>
<tr>
<td>Maroc</td>
<td>15936</td>
<td>255</td>
<td>12934</td>
</tr>
</tbody>
</table>

Based on these data, the pandemic has killed at least 573288 people worldwide, with more than 13 113 181 confirmed cases in 193 countries and territories. The number of cases recovered is of the order of 7268022. As of 14 July 2020, Morocco has notified 16097 confirmed cases (positive), 257 deaths, 13442 recoveries, 2398 cases under treatment and 899043 cases excluded after negative laboratory tests, according to an update by the Minister of Health (Table 2).

Table 2. Data from Morocco affected by the coronavirus pandemic 2019-2020 (OMS).

<table>
<thead>
<tr>
<th>Case</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contaminated</td>
<td>16097</td>
</tr>
<tr>
<td>Deaths</td>
<td>257</td>
</tr>
<tr>
<td>Recovered</td>
<td>13442</td>
</tr>
<tr>
<td>Excluded</td>
<td>899043</td>
</tr>
</tbody>
</table>

Morocco has decided "to extend the state of health emergency until 10 August throughout the country”. And this in compliance with the rules of hygiene and health security as well as the preventive measures taken by the Moroccan authorities by showing responsibility and patriotism.
With the new Covid 19 epidemic spreading around the world (Table 1), people are trying by all means to protect themselves from this virus. The latter has caused a worldwide panic. While the controversy, caused by the use of chloroquine against the coronavirus, is in full swing, Morocco (Table 2) has taken a radical decision by introducing Chloroquine and hydroxychloroquine in the therapeutic management of confirmed cases of Covid-19 (Table 3). A measure approved by the Scientific Committee. However, it takes time for patients treated with chloroquine and hydroxychloroquine to interact with treatment since the duration of this depends on the health or integrity of each patient’s immune system. Indeed, the proper functioning of the immunity makes it possible to fight effectively against every kinds of infections. This is why it is very important to strengthen it to prevent and treat possible infections, such as colds, fever, soreness, shortness of breath, and sore throats, symptoms similar to those of this SARS-Cov-2 virus.

Indeed, nature offers a multitude of medicinal plants equipped with many highly active bioactive substances use, known for decades, becomes necessary if not urgent as a natural remedy to fight or protect against this virus while avoiding excessive use of antibiotics. These plants include thyme, lemon, ginger and honey for their health benefits [11]. Their traditional natural use against flu, cold, cough, gastroenteritis is well known in Morocco. This allows people to protect themselves, to treat certain infectious diseases and to fight a number of respiratory problems thanks to their therapeutic potential due to their antibacterial, anti-oxidant, and especially antiviral activity. The infusion, prepared in a traditional way from these plants with an additional supply of honey helps to protect against these infections by strengthening the immune system. When it is low, the risk of getting seek is present. Thus, this infusion can be used to naturally strengthen the body’s immunity because it contains a significant amount of vitamin C, zinc, quercetin (Table 4); known as bioactive substances essential for the proper functioning of cellular metabolism against pathogens [11]. Indeed, the composition of its components shows that our infusion is rich in mineral salts, vitamins, trace elements (Table 4), which gives it an effectiveness against pathogens including bacteria and viruses. We retain in our analysis that the constituents that were suddenly placed at the heart of the news at the beginning of the year 2020, due to the mediatization of various works and statements of scientists, which evoke their potential inhibitory capacities against certain viruses, and eventually the famous SARS-Cov-2 (Table 4). In fact, zinc has antiviral activity due to its increase of its concentration inside the cell in the form of Zn\(^{2+}\) facilitated by zinc ionophores such as pyrithione (PT). Increased cellular Zn\(^{2+}\) concentration could block replication of RNA viruses, including SARS-Cov-2. Therefore, zinc would be necessary in the blocking of intracellular multiplication of RNA coronaviruses, including the Chinese coronavirus [12]. Some symptoms of Covid-19, strange for a respiratory infection, including loss of smell and intestinal disorders, correspond to those of zinc deficiency. Therefore, zinc is necessary for proper functioning of the immune system [13]. Very recent studies, involving healthcare professionals in contact with patients with covid-19, use hydroxychloroquine in combination with vitamin C and zinc as a preventive measure [14]. German researchers have just published an entire study on this subject, calling for testing the combination of hydroxychloroquine + zinc against Covid-19 [15].

However, flavonoids are natural compounds with multiple pharmacological characteristics: antioxidant, anti-inflammatory, analgesic, anti-carcinogenic, antibacterial, antifungal and antiviral activities [16]. Quercetin, a flavonoid, has unique biological activities to improve physical activity and reduce the risk of infection [17], in addition to its main effects on inflammation and immune function [18].

Other studies have shown that quercetin, a dietary supplement, is capable of inhibiting the replication of the influenza and rum virus [19]. Indeed, it is a potent antiviral [15] which there is good reason to believe could be effective against SARS-Cov-2 coronavirus, whether for prevention or treatment [20]. The increased intake of flavonoids, especially quercetin, is a new therapeutic option in the treatment of airway inflammation, and decreases the severity of asthma attacks and improves the patient’s overall condition. Finally, vitamin C (L-ascorbic acid) (Figure 1) is one of the well-known antiviral agents, particularly against the influenza virus [21]. Vitamin C, known for its antioxidant properties, is able to trap harmful reactive oxygen species, thus protecting cells and body tissues from oxidative damage and malfunctions. However, Vitamin C also has many other important functions in the body, many of which are known to support healthy immune function [22].

### Table 3. Percentage of statistical data on Covid 19 in Morocco.

<table>
<thead>
<tr>
<th></th>
<th>Morocco</th>
<th>Contaminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaths</td>
<td>257</td>
<td>1.59 %</td>
</tr>
<tr>
<td>Recovered</td>
<td>13442</td>
<td>83.5 %</td>
</tr>
</tbody>
</table>

### Table 4. Quantities of components in Lemon, Thym, Ginger and Honey.

<table>
<thead>
<tr>
<th>Products</th>
<th>Lemon</th>
<th>Thym</th>
<th>Ginger</th>
<th>Honey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin C</td>
<td>57 mg</td>
<td>170 mg</td>
<td>0.6 mg</td>
<td>Traces</td>
</tr>
<tr>
<td>Zinc</td>
<td>0.054 mg</td>
<td>1.81 mg</td>
<td>0.24 mg</td>
<td>1.1 mg / kg</td>
</tr>
<tr>
<td>Flavonoids (Quercetin)</td>
<td>36.89 mg</td>
<td>60.3 mg</td>
<td>0.08 mg</td>
<td>Traces</td>
</tr>
</tbody>
</table>
Naturally, a lack of vitamin C leads to serious health problems. Vitamin C plays a role in the preventing various infections and in the reducing their duration. It seems obvious that vitamin C has significant effects against pneumonia. The practical importance and effective optimal doses of vitamin C for infection prevention and treatment are unknown [23]. During infection, vitamin C levels may become depleted and a person’s needs may increase depending on the severity of the infection [22]. In severe cases, this may require intravenous administration of large doses to recover vitamin C deficiency, as an infusion of vitamin C infusion was performed in the treatment of severe pneumonia, caused by Cov-2019, which began in Wuhan, China [22].

![Figure 1. Structure of Ascorbic acid, Quercetin and basic structure of Flavonoids.](image)

4. Conclusion:
The present work has shown that the phytotherapeutic use of this infusion, prepared according to the Moroccan tradition from a mixture of lemon, thyme, ginger, all is supplemented with honey, could be very useful in the fight against respiratory problems caused mainly by rum and influenza, whose clinical manifestations correspond very well to the symptoms of coronavirus SARS-Cov-2. We believe that this infusion could be a therapeutic alternative to protect against the covid 19 virus. Our preparation, proposed and prepared according to a traditional method, constitutes certainly a therapeutic basis as a natural alternative not only to the excessive use of drugs and antibiotics but also a promising research track not to be forgotten in this race to fight against coronavirus SARS-Cov-2 especially under current circumstances.

References:


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