(The possibility of using biologically extracted chemical compounds as anti-corona virus.)

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Abstract:
Corona virus is a virus that has the ability to penetrate the wall of the inner epithelial lining of the lungs, and thus spread fear and panic in the hearts of ordinary people, as well as researchers. And once this virus began to be active in infecting people, starting with China and the rest of the world, scientists and researchers worked to search for appropriate treatment and appropriate prevention methods to get rid of the infection caused by this deadly virus. It is imperative to know a set of concepts related to this topic, including the most important general characteristics of the Coronavirus, as well as the structural structure and behavior of the host cell, including the cells of lung tissue in the human respiratory system. And how the virus affects cellular respiration, which leads to human death. Our current research deals with studying the possibility of using some naturally extracted chemical compounds as an anti-virus, specifically corona virus, based on the fixed proportions and quantities through which the mechanical effect of these compounds on Corona virus is observed, depending on previous studies in this field.

Keyword: (chemical compounds, corona virus, antiviral mechanism).
1. Introduction

Coronavirus (CoV) is a virus that consists of a wide family of viruses with RNA, and it is the virus that infects a large group of hosts in mammals as well as birds, and thus causes many diseases. CoV has an RNA genome, consisting of four different genera that are mutable, hybridized, and recombined during reproduction, which is why the coronavirus is so diverse. Human Coronaviruses (HCoVs) are described as causing various types of respiratory diseases. The emergence of the Corona virus has led to the disease known as severe acute respiratory syndrome (SARS-CoV) as well as Middle East respiratory syndrome viral (MERS-CoV) during the past two decades. And the new and sudden emergence of the Corona virus, which was discovered at the end of 2019, has caused a lot of deadly human pneumonia with a wide global impact, and this is why this infectious disease caused by the new Corona virus is called (Coronavirus Disease 2019) (COVID-19)) by the World Health Organization (WHO) (1, 2).

According to what has been observed for those infected with Coronavirus, the common respiratory symptoms of an infected person are shortness of breath, fever and cough. In more severe cases, the infection can cause pneumonia as well as acute respiratory syndrome as well as kidney failure and ultimately death. By May 20, 2020, this deadly coronavirus had caused more than 4.97 million confirmed cases and more than 326,000 deaths worldwide. COVID-19 has spread to more than 190 countries in the world, and the outbreak of this disease has seen no real signs of abating. Despite the great, intensive efforts that researchers have devoted to developing anti-Coronavirus drugs, all treatments that are supposed to be effective against coronavirus infection have remained elusive until the present time. This lack of effective immunization, prevention and antiviral drugs, poses a formidable challenge to the current global efforts to contain the noticeable outbreak of COVID-19. Consequently, it is known that there is an important unmet medical need to manufacture effective antiviral drugs to manage the current COVID-19 pandemic. Natural drugs, medicines and compounds of plant origin provide an important and rich resource for the discovery and development of new antiviral drugs in general. Therefore, many natural medicines have been shown
to have strong antiviral activities that work against a variety of different viral strains, including corona virus, herpes simplex virus (3, 4), influenza virus (5), HIV (6), and hepatitis B and C viruses. Until this time, it has been reported that there are dozens of chemical compounds extracted from herbs and hundreds of natural biological compounds that have antiviral activities, through their effect on changing the virus's life cycle, such as virus entry, replication, aggregation, and subsequently release, as well as special reactions that occur with the virus host. The main purpose of this review is to see the extent of the update that natural products are getting and to study the important chemical compounds they contain that have promising anti-viral effects in general, and against the Corona virus in particular, and to discuss and use them in the research field. Nature provides a large source of chemical sources and (materials and compounds) for exploration and development, and suitable drug units for the treatment of various diseases, including viral diseases (7).

2. Coronavirus image micrograph:

The image above, visible in the small yellow square, shows the area shown at a scale of 5.0 nm. However, the truth has been revealed in more detail, clarifying the shape of the virus, that the true state of this virus, and tissues with a true turquoise color of the Corona virus can be evidence of N 3 inhibitors as seen in a 5.0 nm microscope. (8, 9). However, this is more evident if a specific part of it is highlighted and enlarged further. While in the microscopic image in the middle, which is displayed evenly, it is larger than it allows to be seen and is much closer than the image that preceded it, and it shows that the Corona virus is more advanced than it was originally. Necrotic cases of severe infection and deterioration were also noted. However, the (AM) - (Angstrom Microscope) is through which another area is examined in orange, as shown in the microscope image.
3. Chemical compounds that have been used against corona viruses:

Naturally prepared chemical compounds have been used in traditional medicine to treat many epidemic diseases over a long history, with the necessary expertise available for this purpose. Thus, antiviral activities are not limited to natural compounds only, but extend to extracting and preparing compounds that are effective in specific ways that researchers use over time. From here, and through repeated experiments and continuous attempts to find out the optimal values of some chemical compounds, it was concluded that there are stable and appropriate values for certain types of prepared compounds that can be an appropriate anti-viral treatment that can be used as a drug commonly used in medicine. And that these active compounds are
shown as in **Table No. (1)**, shown below in which the different proportions of these compounds are shown.

| Compound Name | Virus acting on | IC₅₀ value | Reported antiviral mechanism |
|---------------|-----------------|------------|-----------------------------|
| Ginsenoside-Rb1 | SARS-CoV | 100 μmol/L | Inhibits glycoprotein activity |
| Saikosaponin B₂ | HCoV-229E | 1.7 ± 0.1 μmol/L | Interferes with events of early viral entry |
| Tetrandrine | HCoV-OC43 | 0.33 ± 0.03 μmol/L | Inhibits p38 MAPK pathway |
| Quercetin-3-β-galactoside | SARS-CoV | 42.79 ± 4.97 μmol/L | Competitively inhibits SARS-CoV 3CLpro |
| Tingenone | SARS-CoV | 9.9 μmol/L | Inhibits SARS-CoV 3CLpro |

These isolated viruses, shown in the above table, showed that they were affected by the drug that was produced as a naturally extracted chemical compound that works to change the course of the virus's life cycle inside the host's body according to the proportions mentioned for each of them and the type of mechanism that it uses to perform the required purpose in this aspect, and in this case, the desired purpose has been achieved, which is the possibility of preventing the growth of viruses using these proportions of compounds. Due to the lack of a suitable vaccine and other effective antiviral agents, COVID-19 continues to wreak havoc in many countries of the world. Therefore, the efforts exerted to reach the final real solutions are still ongoing by many researchers in order to apply them on the ground to protect the lives of people from this deadly epidemic.
4. The potential of natural compounds in the clinical treatment of COVID-19:

As was shown through previous studies and sources that explain the structural interlayer of the virus, it was found that it depends on its spinal proteins to bind to the host cell surface receptor for entry. After the virus enters the host cell, it will bind to the host’s wall to destroy it and then throw the positive genomic RNA into the host cell to bind directly to the host’s ribosome to translate a set of large concurrent proteins that are processed by proteolysis into components to generate new viruses. In order to replicate the RNA genome, CoV encodes an exact copy. Moreover, preliminary analyzes of genetic sequences from COVID-19 patients indicate that the catalytic sites of COVID-19 enzymes that can represent antiviral targets are highly conserved and share a high level of serial similarity with the corresponding SARS and MERS enzymes. Due to the lack of a suitable vaccine and other effective antiviral agents, COVID-19 continues to wreak havoc in many countries of the world. Therefore, the efforts exerted to reach the final real solutions are still ongoing by many researchers in order to apply them on the ground to protect the lives of people from this deadly epidemic. It is clear that there is an urgent medical need to satisfy the use of effective and appropriate treatment for COVID-19. And the growing evidence indicates that there is a group of severe COVID-19 patients that may be caused by infection with more than one strain of this type of virus. And through periodic examinations and clear symptoms on Corona patients, pulmonary infection (including the syndrome known as acute respiratory distress) is found in more than 50% of COVID-19 patients who develop high lymphocyte phagocytosis (HLH) (10). The cytological profile of secondary HLH is associated with patients with severe COVID-19, which is characterized by an increase in TNF-α, IL-2, IL-7, interferon-10-induced protein, and other chemical stimulating agents. The recent study revealed 150 confirmed cases of COVID-19 leading to death, which is due to the association with significantly higher ferritin levels (meaning that each 1297.6 ng / ml in non-survivors is compared to 614.0 ng / ml in survivors, which indicates that the mortality of infected patients COVID-19 may be linked to hyper-inflammation caused by the virus (11).
5. Discussion.

Many extensive studies have been conducted over the past years in order to determine appropriate anti-corona virus agents from natural extracts, medicines and herbal compounds (12). In this current study, we discuss natural medicinal formulas that have been extracted from natural plants and traditional medicine, with procedures and mechanisms. Antiviral and the possibility of its use in clinical practice against corona virus. The chemical compounds extracted from nature and used as an anti-virus are gradually as shown in the diagram (1), respectively, each according to its percentage, amount and effect on the type of virus and how to inhibit its functioning as a microorganism that causes serious complications for humans that lead to it. to death. Therefore, it became necessary to devise an appropriate solution to get rid of the threat of viruses, specifically Corona virus and the infection that it caused that spread among people around the world. (Ginsenoside-Rb1) used as anti-SARS-CoV, by 100 μmol/L amount, it acts on Inhibits glycoprotein activity (13), while Saikosaponin B₂ used as anti- HCoV-229E, by 1.7 ± 0.1 μmol/L amount, it acts on Interferes with events of early viral entry (14), but Tetrandroine used as anti- HCoV-OC43, by 0.33 ± 0.03 μmol/L amount, it acts on Inhibits p38 MAPK pathway (15), and Quercetin-3-β-galactoside used as anti- SARS-CoV, by 42.79 ± 4.97 μmol/L amount, it acts on Competitively inhibits SARS-CoV 3CLpro (16), finally Tingenone used as anti- SARS-CoV, by 9.9 μmol/L amount, it acts on Inhibits SARS-CoV 3CLpro (17). Naturally extracted chemical compounds, as well as natural products such as herbs and other drugs, have many vital activities, and they have been used continuously and on a large scale to treat diseases of viral origin, which lead to colds, as well as influenza and SARS resulting from infection with the Corona virus itself. Numerous research studies also reported the presence of anti-inflammatory activities of chemical compounds extracted by natural methods, and inflammation resulting from infection was considered the main pathogen behind the various symptoms and medical conditions, including influenza and COVID-19.
Figure No. (1): shows the following details: (1- The type of the boat. 2 - The appropriate amount and optimum value to influence the behavior of the virus. 3- The type of virus that works to suppress it. 4- Mechanism of the compound’s action as an anti-viral.)

The glycoprotein (S) present in the Coronavirus is the main characteristic antigen on the surface of the virus and is important for antibody resistance during infection, and it is the main focus in vaccine design. S is defined as a class I viral fusion protein that has been synthesized as a precursor to a monopeptide chain consisting of more than about 1200 amino acids. The S protein is processed by the host protease to generate two prominent subunits, S1 and S2, which remain covalently unrelated to conformation prior to their fusion (18). Since the extraction of effective chemicals from nature, traditional medicine in many countries of the developed world has the characteristics of multiple pathways, components and multiple goals of treatment against various diseases, it has great potential for treating COVID-19. As indicated in this review of previous sources and vital experiences that lead the researcher for this purpose, and many natural products or traditional medicine formulations have shown promising anti-viral activities against corona viruses through sophisticated and multiple targeted approaches, and they can be further developed and utilized from their conversion. Also, bioactive derivatives and therapeutic threads are successful in this purpose. Despite all
this, and although these newly discovered natural products have shown good potential in manufacturing the appropriate treatment for COVID-19, there is still a long way to go to ultimately be used in the specialist clinic and given to patients once and for all. This is due to many reasons, including the difference and multiplicity of the various strains of Corona virus, in addition to the association of more than one strain in infecting a person, and here lies the source of the danger that makes this infection lead the patient to death. One of the major constraints and obstacles important to the development of these natural products used in pharmaceuticals is their solubility and bioavailability (19). The high costs and complexity of actual application in ongoing clinical trials also add another barrier to the development and development of new antivirals that have been derived from natural products (20). Therefore, many pharmaceutical companies face these problems and obstacles that affect the continuation of this field, and the improvement of safety requirements for drug licensing. The difference in the mechanism of action of the product used against the Corona virus and the extent to which the optimal quantities and amounts are used for this purpose have made there a focus on this aspect in order to reach the fixed proportions that must be studied and approved as usable quantities. Chemical compounds prepared as a successful drug used against Corona virus.

Conclusion

Although there are many difficulties facing development in discovering and developing many natural compounds and converting them into anti-viral drugs, a lot of increasing efforts have been monitored in many countries of the world to develop antivirals from naturally extracted products and compounds. Both clinical and non-clinical studies. The search for new, advanced and effective agents as anti-virus from natural products is still a very difficult and arduous but exciting task, as it may lead the researcher’s life to numbness, and possibly death too unless he takes great care in working in this field. We encourage researchers to continue this pioneering march in order to join efforts to reach the ultimate treatment for the Corona epidemic in the world and protect human society from this deadly epidemic.
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