

CORONAVIRUS INFECTION AND ITS CONTROL THROUGH VARIOUS APPROACHES: A SHORT REVIEW



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ABSTRACT

Coronavirus is a common virus causing very serious issues to public health. This virus, SARS-COV-2, has disseminated worldwide respiratory illness, designated as COVID-19. This viral infection disturbs people in various ways. A lot of people infested due to this virus develop a mild illness and get relief soon without any sort of hospitalization. But mostly, it becomes highly severe later and the patient has to undergo shortening of breath as well as some other chest-related abnormalities like Middle East Respiratory Syndrome (MERS) and Acute Respiratory Syndrome. In this manuscript, we have discussed multiple areas like symptomatology, management approaches including Homoeopathic and Allopathic (drugs) treatments, plus vaccination. Lastly, we have put in the conclusion of overall literature, and most importantly implicated or suggested certain new research areas for the researchers to explore which may assist in preventing further spread of this threatening syndrome now and in the future.

1. INTRODUCTION

1.1. SYMPTOMS OF CORONAVIRUS INFECTION

In patients with pneumonia caused by SARS-CoV-2 (new coronavirus pneumonia), the most common indicator or symptom observed in the patients was fever pursued by cough. The ground-glass opacity of the lungs was the common judgment from a CT scan of the chest. One of the cases of SARS-CoV-2 pneumonia in the United States of America is verifying good to Remdesivir, which is still in the trial period in China (Cheng Lai et al., 2020). There is not merely one coronavirus species but are the six that become the source of disease to human such as, common cold, acute respiratory syndrome as well as the Middle East Respiratory Syndrome. In January 2020, scientists from Wuhan city of China secluded a new coronavirus (SARS-CoV-2), a causative agent for an upsurge of anonymous pneumonia that had not been originated in humans earlier. The spreading of this novel coronavirus takes place through person-to-person contact, respiratory droplets, plus by touching anything contaminated by the virus. The symptomatology of this viral infection mostly includes fever, cough, breathing trouble, pneumonia, and severe acute

respiratory syndrome. Those people who are older age and partaking in poor immunity are at a larger threat of this infection (Ramesh et al., 2020).

2. MANAGEMENT STRATEGIES

Numerous defensive approaches, as well as non-pharmaceutical interventions, are in use to limit the spreading of disease i.e. watchful infection control, the isolation of patients, and more importantly, is social distancing. Management is chiefly assisting people with the help of oxygen therapy that is evidencing useful in the treatment procedure. Moreover, Corticosteroids plus antivirals therapy have also been verified for a supportive role in critical management strategies (Nicola et al., 2020). This disease affected the entire world, and many myths are socializing about its diagnostic procedures. The option for analysis should be reliant on clinical and epidemiological factors and associated with an appraisal of the chances of this viral infection. To detect COVID-19, various speedy diagnostic and serological tests are in use now. However, the authenticity of such newly marketed tests is not good enough yet. For that reason, it is not suggested any such immune chromatographic or serological speedy screening tests to inspect SARS-CoV-2 contagions. In case to detect COVID-19, PCR (Polymerase Chain Reaction) is a more reliable and authentic diagnostic test, which is a molecular-based examination to conform to SARS-CoV-2. Obliteration of highly transmittable SARS-CoV-2 Virus that is the main source for this newly emerged deadly pandemic (COVID-19) dictate our attention and understanding is desired regarding the way as well as a mode of transmission throughout the whole world. Certain precautionary measures naming as hand-washing, staying at the home plus upholding the social distance are attested as effective and instant way-outs to protect humans from this secret enemy (Sajid and Amgain, 2020). A person having a travel history from COVID-19 affected countries in the last 14 days or a person whose COVID-19 test is positive are suspect cases and need evaluation (Ramesh et al., 2020).

2.1. ROLE OF HOMEOPATHY IN CONTROL OF CORONAVIRUS

A wide medical practice has a significant role in the immune-boosting effect of Homoeopathic medicines as well as the hindrance of viral infection. During several disease outbreaks like Cholera, Chikungunya, Japanese Encephalitis, and Dengue Fever, etc. the Genus *Epidemicus* has been used to control the spread of disease and shows good results. Given the medical achievement in those severe contagious diseases, Homoeopathy as an adjuvant to the standard of care should be evaluated for the administration of COVID-19. The Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH) have recommended the use of Arsenicum album-30 for its doable role in stopping the COVID-19 virus (N Parikh and D Parikh., 2020).

Antimonium Tart acts directly on mucous membrane producing catarrhal swelling of larynx trachea and bronchi causing amassing of mucous. The Nerve center is affected by this respiratory toxin, causing the severe venous obstruction. By this muscle relaxes and respiration is affected more. It damages the nerves which make emesis..... Dr. W. H. Burt: Physiological Materia Medica (Burt and William H, 1881). In Lecture Notes on Materia Medica, Dr. J.T.Kent says that in Antimonium Tart the beginning of a disease is similar to common upper respiratory tract infection followed by temperature with a dry cough but afterward the disease moves to the lower respiratory portion where a patient doesn't respond to any other medication Dr. Kent calls this poor response of a person to the disease and in that case the respiratory distress starts. Thus it is very good therapy for poor response where the patient immune system stops working and a lethal rattle in the chest causes death (Boericke, 2020).

Dr. William Boericke in his books wrote regarding the antihelminthic characteristics of Antimonium Tart, which stimulates the oxidizing action on the shielding cover of a parasite. The outer layer of the coronavirus also has a lipid coat which can be ruined by Antimonium Tart. Thus we present that Antimonium Tart can be used as a prophylactic and therapeutic involvement in COVID 19 disease based on existing literature and information and its medical use.

2.2. TREATMENT VIA ALLOPATHIC MEDICINE AND VACCINATION

Treatment in coronavirus according to allopathic, included intravenous infusion of fluid, oxygen therapy, and life support system in serious cases. It is necessary to contact the doctor immediately if someone has symptoms of the virus-like flu, fever, and breathlessness. This virus is familiar to the human immunodeficiency virus (HIV) in terms of virus replication and proteins. Different managing medicines are present to clear and manage in vitro action

in opposition to SARS-Cov and MERS-Cov (Savarino et al., 2003). Some drugs being used to get relief from coronavirus infection, and their functions are discussed (see Table 1 for detail). The two vaccines such as EUAs – Pfizer-BioNTec and Moderna - are until now the only products available to Americans. Pfizer’s vaccine is given by the FDA for people 16 and older, making it the first coronavirus vaccine presented to the American. The second one is Moderna’s vaccine that has now been approved for people 18 and older. Both these vaccines have been found highly effective for preventing COVID-19 in clinical examination participants. FDA analysis shows that regardless of age, race, or other risks of serious illness due to infection, Pfizer BioNTech's two-dose vaccine can effectively resist 95% of COVID-19. And it turns out that Moderna can produce approximately 94.5% of COVID-19 for people of all ages, genders, and races (Nania et al., 2021). Multiple vaccines and their percentage relief is exhibited below (Fig. 1).

Table 1: Multiple allopathic medicines (drugs) being used to halt deadly coronaviruses

S. No	Names of allopathic medicine	Function for Covid-19 disease	Citations
1	Remdesivir	It is a very potent antiviral drug that de-accelerates the RNA viral contamination of SAS-Cov-2.	(Kong et al., 2020; Gordon et al., 2020)
2	Ivermectin	This drug is reported to have in vitro antiviral function against a wide-ranging coronavirus	(Wagstaff et al., 2012; Kosyna et al., 2015)
3	Chloroquine	It effectively works for <i>in vitro</i> inhibition of novel COVID-19 virus	(Wang et al., 2020)
4	Hydroxychloroquine (HCQ)	Efficient to reduce SARS-CoV-2 infection	(Shittu and Affolami., 2020)
5	Lopinavir/Ritonavir	Recommended for a clinical cure for COVID-19. A combination of both antiviral drugs along with interferon is more favorable.	(Hung et al., 2020)
5	Arbidol (Umifenovir)	The antiviral action of Umifenovir against SARS-CoV-2 has been approved <i>in vitro</i>	(Deng et al., 2020)

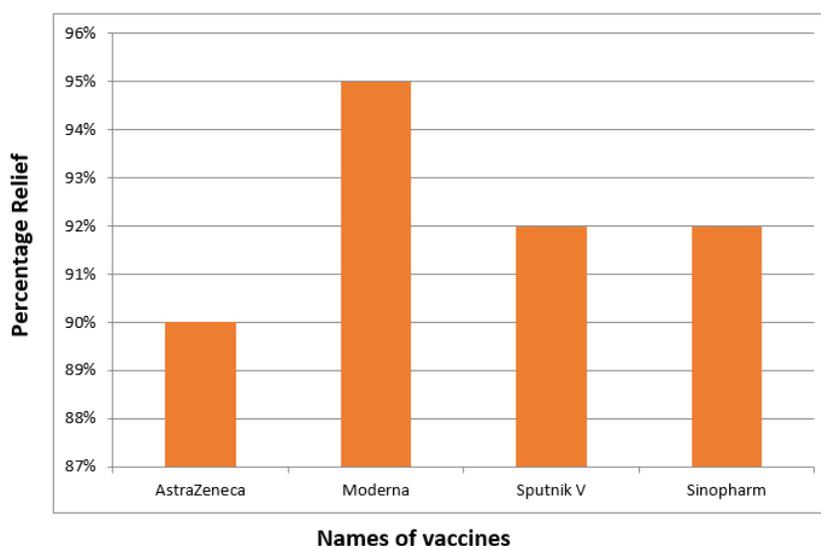


Figure 1: Efficiency or relief of different vaccines (% relief) against coronavirus infection

5. CONCLUSION AND RECOMMENDATIONS

Coronavirus is a contagious disease. From health experts' point of view, it was originated from bats and later was transmitted to humans. It causes diseases such as Middle East Respiratory Syndrome and Acute Respiratory Syndrome. Sometimes it becomes deadly and medical assistance is needed but in many cases, patients recover without any hospitalization. Six species of coronavirus are known to cause diseases in humans such as the common cold, fever, etc. In China, scientists discovered a new coronavirus in January 2020. This virus was responsible for the

outburst of unidentified pneumonia which was not found in humans before. Its incubation period lies between 2 to 14 days. Seclusion of patients, careful control of disease, and social distancing can minimize the spread of this disease. Corticosteroids and antiviral therapy are proving helpful in their control. To detect COVID-19, many tests are in use but the most reliable test for its detection is PCR (polymerase chain reaction). To save ourselves from this deadly virus, we should follow safety measures like proper hand washing, staying at home, and maintaining social distance. Homeopathy also has a significant role in this pandemic. The homeopathic medicine Arsenicum album-30 can be proved helpful in controlling COVID-19. The upper layer of coronavirus is made up of a lipid coat that can be destroyed by homeopathic medicine named Antimonium Tart. Allopathic treatment in coronavirus includes an intravenous infusion of fluid and oxygen therapy. Some vaccines have now also been introduced, such as Pfizer's which is given by FDA for people 16 or older. The second one is Moderna's vaccine which is approved now for use for people 18 or older.

By studying literature, I believe that by boosting immunity we can be protected by diseases. The immune system is the best because it increases the body's natural ability to defend against pathogens. Boosting our immunity, obeying safety measures such as proper handwashing, avoid close contact with a person who is sick, avoiding crowded places, and maintaining social distance can help control Covid-19 infection. The role of homeopathy can help control the virus such as Arsenicum album-30 can help in preventing coronavirus. Washing our hands frequently with alcohol-based hand wash because it kills the germs as well as viruses that may be present on our hands. We should cover our mouth and nose with a bent elbow as well as by tissue during coughing and sneezing. Clean those surfaces repeatedly which are used regularly. We should avoid touching our mouth, eyes, and nose. The main point is that by following good respiratory hygiene, we not only protect ourselves but also other people from viruses, which cause colds, flu, and COVID-19.

There are some areas of research that are not well explored and can be impacted by the COVID-19 in present or in the future. These areas include vaccine development, medication therapy, healthcare and equipment, social, economic, environmental, sustainability, psychiatric, information technology revolution, awareness workshops, biological warfare, and psychological issues. I am certain that if researchers explore these areas and equip each domain with health facilitation then we can halt coronavirus infection to spread worldwide.

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CONFLICT OF INTEREST

The author have declared that no competing interests exist.

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