Commentaries

Recent Progress in the Treatment of Coronavirus Disease

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Abstract

Coronavirus disease is a big threat to the people all over the world. Due to this pandemic, people's daily life activities are hampering as well as socio-economical condition are getting worsen. Thus, it's high time to prevent or treat this dangerous infectious disease. Therefore, researchers are working on to discover medicine or vaccine. Since the start of pandemic, different types of drugs are used by researchers and health specialists to treat this disease; but still there is no drug available which can guarantee the full recovery against this virus. As a result, doctors and health care specialists are treating the patients by repurposing different types of drugs.

Key words: Corona virus, SARS Cov-2, drugs, vaccines, drug repurposing.

Background

Coronavirus disease is an infectious disease which is caused by SARS Cov-2 virus. This virus is responsible for cytokine storm that means overactive immune response in the body which may results in death of coronavirus infected patients. Most common symptoms of coronavirus include fever, dry cough and tiredness whereas in severe cases shortness of breath, chest pain or loss of movement or speech may develop in the patients. Other symptom includes body aches, sore throat, diarrhea, headache, loss of taste or smell and discoloration of fingers or toes [1]. The symptom of Coronavirus is similar to severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS) [2].

At first Coronavirus was found in Wuhan, China. Most people believe that it was originated from bat. Initially, lots of people from China were infected by this virus because transmission started from China. The most dangerous feature of this virus is that the infected people can be asymptomatic. As a result, silent transmission was occurred at the initial stage of virus transmission. Hence, this virus rapidly transmitted throughout the world. World Health Organization (WHO) announced the spread of Covid-19 as a pandemic on 11th March, 2020. At present, USA is most infected country all over the world [3, 4]. Due to this pandemic, social life and economical condition stands still. Therefore, we need to discover an effective and safe medicine as early as possible to treat this virus. My aim is to provide a brief idea on recent therapeutic approach in the treatment of coronavirus disease.

Overview on drugs and vaccines for Coronavirus disease

Recent studies have shown that, coronavirus not only attack lungs, but also attacks gastrointestinal tract, kidney, blood vessels, heart and central nervous system due to the presence of ACE2 (Angiotensin-converting enzyme 2) receptor in all of those organs. Coronavirus binds with this ACE2 receptor leading the progression and multiplication of virus in the body [5]. This virus thickens the blood which results in blood clotting. Thus, increasing the risk of heart attack and brain stroke in coronavirus infected people.

Researchers are trying their utmost best to discover vaccine and medicine to prevent or treat this disease. Besides, researchers are also repurposing several drugs for the treatment of coronavirus. To treat coronavirus, antivirals such as nucleoside analogs, neuraminidase inhibitors, protease inhibitor; immunomodulators such as corticosteroids, interferon, immunoglobulins are in use. Different types of vitamins such as Zinc, Vitamin D and Vitamin C are also in use to improve the immune response of the body [6].

Table. 1: Drugs recently utilizing in Coronavirus disease treatment

Type of Drugs	Drugs/Repurposed Drugs
Antivirals	➤ Remdesivir ➤ Favipiravir
Immunomodulators	➤ Corticosteroids ➤ Interferon (ribavirin, lopinavir, ritonavir) ➤ Immunoglobulins
Nutritional Supplements	➤ Vitamin D ➤ Vitamin C ➤ Zinc
Anti-malarial drugs	➤ Hydroxychloroquine
Anti-parasitic drugs	➤ Ivermectin
Rheumatoid arthritis	➤ Baricitinib
Anticoagulants	➤ Heparin, Warfarin.

Another research is going on which is called as Plasma therapy. South Korea already started this therapy for the virus infected patients and till now the initial results are giving a great hope to treat this notorious disease [7]. Another study showed that, antibodies from Llamas can bind to spike protein and thus prevent coronavirus to infect the cells [8].

Researchers are also working to develop vaccine which can prevent coronavirus. The Oxford Vaccine Centre is working on ChAdOx1 nCoV-19 vaccine. It is a weakened version of an adenovirus. Human trial of this vaccine is also going on [9]. Researchers from Sinovac biotech is also working on Coronavirus vaccine which is a Beijing based company. It has started its first animal study of vaccine against Coronavirus which showed safe and effective results in Macaques monkeys [10]

Conclusion

From the above discussion, it could be stated that there is a great hope for developing a vaccine or discovering a medicine or repurposing of medicine to prevent the coronavirus in coming days. But the main problem is with the time. We need vaccine or medicine within short period of time due to the contagious nature of this virus. Because, if virus spreads for long time, there is a great possibility for mutation and still it's mutating. As a result, this mutation will invalid the effectiveness of vaccine and medicine. Hence, more funds should be given to the researchers to do more research on Coronavirus treatment and discover the medicine or vaccine which can prevent or treat this notorious virus and therefore bring global peace and stability around the world.

Competing of interest

There is no competing of interest to declare.

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