

Evaluation of SARS & COVID-19 Pandemic with Prevention and Hygiene Action Plan

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ABSTRACT

Since last two decades, the evolution of viral contagious poses enormous hazard to the health of human beings and society. Human antiquity is observing a very astonishing time by fighting with an invisible enemy known as a novel COVID-19 coronavirus. Initially, it was observed in the City of Wuhan, China and soon spreading across the World. COVID-19 virus having more than 80 % similarity to previously identified virus in 2002 named SARS (Severe Acute Respiratory Syndrome). COVID-19 is much more deadly as compared to others zoonotic infections like SARS and MERS because it has a very high transmission rate. The current review explores the various similarities and difference occurring in the SARS and COVID-19 virus, including their preventive and hygienic measures.

Key words: COVID-19, Wuhan city, Pandemic situation, Coronavirus, SARS.

INTRODUCTION

Contagious micro-organisms like parasites, bacteria, fungi, virus, causes many infectious diseases. These diseases spread from one person to another either directly or indirectly. Generally, these viruses spread through various different modes such as skin contact, ingesting contaminated food or water. Many a time's viruses also spread by the way of the transfer of body fluids and also by touching an object that a person carrying a virus has also touched. Like in the past, the world came across some of the

most destructive or horrifying pandemics and outbreaks. In the year 1918 an estimated of 50 to 100 million people died because of gruesome flu pandemic. ^[1] Moving further in the year 1957, an outbreak was caused due to Asian flu and the Hong Kong Flu in 1968, due to which millions of deaths were caused worldwide and also the Swine Flu in the year 2009.

At present, we all are facing a very tough time by fighting with an invisible enemy which is known as novel COVID-19-coronavirus. On 30th January 2020 the COVID-19 epidemic was officially declared as a public health emergency of International Concern. ^[2] At the initial stage it started from 12th December 2020 possibly related to the seafood market, Wuhan, province of China and now rapidly spreading across the world. Coronavirus is basically a family of viruses in the Nidovirales order. It is a very significant viral pathogen in both humans as well as humans.

COVID-19

The infection COVID-19, caused by viruses named SARS-CoV-2, a novel virus belongs to the family of Coronavirus, word corona virus, the prefix for the word comes from the Latin word for "crown", it is basically due to its crown like appearance of the virus. Generally speaking, there are four classifications of coronavirus, which are Alpha, Beta, Gamma and Delta. Human Coronavirus consists of the first two types

which are Alpha and Beta. When this virus came into existence this was dangerous, especially for the elderly people as they are more prone to get easily infected because of the reason not having a very strong immunity system. Human to human

transmission occurs mostly between the members of a family also including the relatives and friends who has intimately contacted by the patients or incubation carriers (Figure 1). [3]

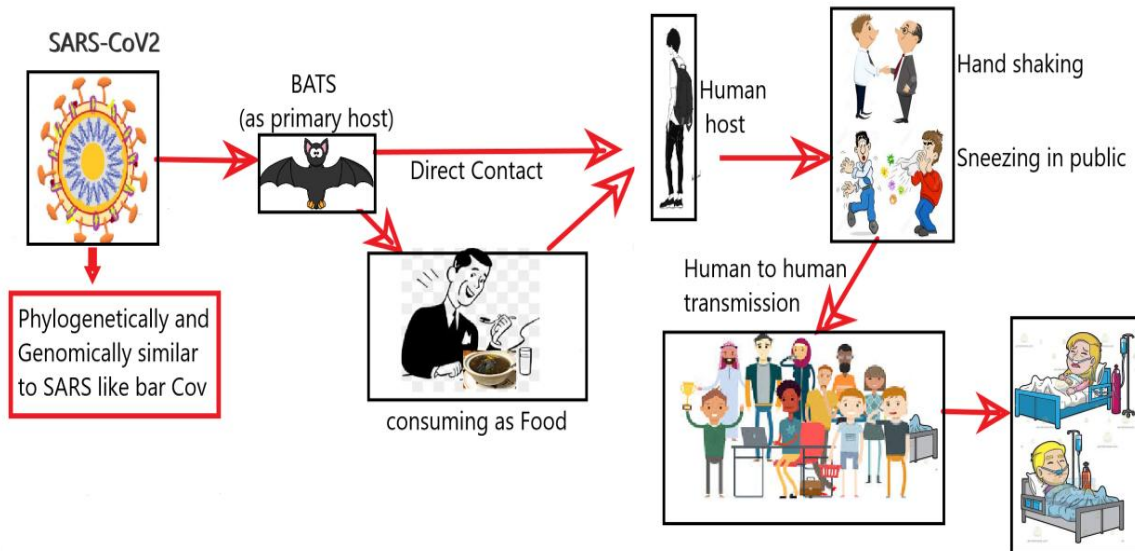


Figure 1. Spreading of corona virus infection

SEVER ACUTE RESPIRATORY SYNDROME (SARS)

The SARS virus was identified in the year 2002 in China, caused with more than 8,000 cases with 779 deaths in around 26 countries globally. It also spreads from person to person through coughing or sneezing and could spread through direct face to face contact with the ill person. It was a drastic form of pneumonia along with fever. Symptoms could be identified as the person may suffer from headache, chills, diarrhea, muscle aches and pain, Dry cough, Shortness of breath and Vomiting. However, it has an incubation period around 2-7 days, while novel virus SARS-CoV-2 has incubation period 14-16 days. [4]

COMPARISON BETWEEN SARS AND COVID-19

SIMILARITIES BETWEEN SARS AND COVID-19:

Both SARS and COVID-19 virus belong to the family of Coronavirus, with

more than 90% genetically similar, originated from China in year 2002 and 2019 respectively, [5] shown in (Figure 2) and they have various identical properties as follows:

- Caused difficulty in breathing
- Are believed, trusted source to have originated in bats, jumping to humans via an intermediate animal host
- Are spread by respiratory droplets produced when a person with the virus coughs or sneezes, or by contact with contaminated objects or surfaces
- Have similar stability in the air and on various surfaces
- Can lead to potentially serious illness, sometimes requiring oxygen or mechanical ventilation
- Have similar at-risk groups, such as older adults and those with underlying health conditions
- Have no specific treatments or vaccines

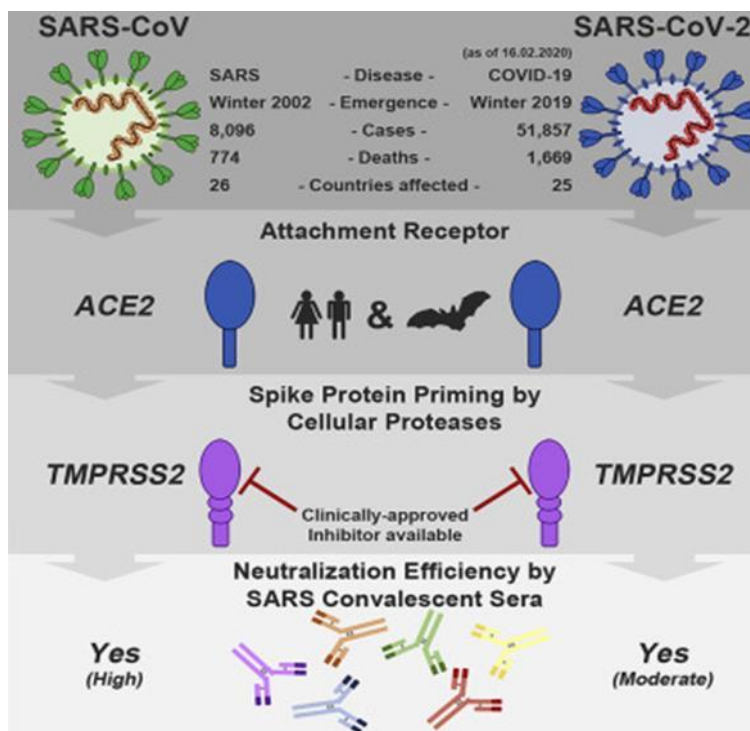


Figure 2. Resemblance between SARS and COVID-19
 (Source: <https://www.sciencedirect.com/science/article/pii/S0092867420302294>)

DIFFERENCES BETWEEN SARS AND COVID-19

Both of them are a scourge, but one was easy to wipe out than the other. SARS and the coronavirus are both respiratory viruses that attack the lower respiratory passages [6] like they alveoli, they go straight for the kill and try to do the most damage, causing pneumonia and ultimately death. But the lethality of SARS was more than the COVID-19 it was estimated at about 10%, while COVID-19 has about 2–3% as shown in Table 1.

Table 1: Showed the various similarities and differences between SARS and COVID-19

PARTICULARS	SARS	COVID-19
Explanation	SARS stands for Severe Acute Respiratory Syndrome, a severe form of pneumonia	COVID-19 stands for Corona Virus Disease 2019, is the infectious disease
Symptoms	Fever of more than 38 °C or 100.4 °F, muscle aches and pains, severe fatigue, severe headache, dry cough, shortness of breath, vomiting, diarrhea	Fever, tiredness, and dry cough, in some cases aches and pains, nasal congestion, runny nose, sore throat or diarrhea [6]
Less common symptoms	Chills and diarrhea	Runny or stuffy nose, body aches and pains, sore throat, nausea
Virus/ Disease	It's a virus	COVID-19 is a virus and disease also
Mode of Transmission	Spread by coughing and sneezing or from direct face-to-face contact	Spread from person to person by droplets from the nose or mouth during a cough or exhales. Also spread through objects or surfaces from eyes, nose or mouth
Incubation Period	2-7 days, in some cases 10 days	1-14 days, most commonly around 5 days
Place and year of origin	In Guangdong province of southern China, 2002	In Wuhan, China; December, 2019
Vaccine or treatment	No vaccine Experimental vaccines are under development [1]	No vaccine Some specific drug treatment is under examination [3]
Health effect	It starts to attack blood vessels leak, blood pressure drops, clots form and catastrophic organ failure [4]	It firstly affects the respiratory system and then affects the heart, blood vessels, kidneys, gut and brain [3]

PREVENTION AND HYGIENE

COVID-19 transmission mainly occurs from person to person contact, and the local and national government departments have taken various measures which include screening of passengers

followed by travel restrictions with halting all travel with control measures into and out of the city. [7] Apart from this very soon implemented physical distancing, discouraged mass gatherings; cancelled or postponed large public events; and closed

schools, universities, government offices, libraries, museums, and factories and encouraged residents to avoid crowded places, these measures reduce the impact of the COVID-19 outbreak and age specific mixing within the population. Awareness provided to the citizens by education campaigns, used of digital platform, etc. and through which citizens started to take preventative measures to protect themselves and others against COVID-19, like staying at home, limiting social contacts, wash hands with soaps or alcohol based sanitizers for at least 20 seconds,^[8] avoid unnecessary touch and wearing protective masks when they needed to move in public.

CONCLUSION

Currently, humanities is under the grip of novel viral SARS-CoV-2 that causes coronavirus disease COVID-19, however, researchers developed several promising vaccine and drugs in a matter of days, but all are in clinical phases. Healthcare leaders around the world learned various lessons from past pandemic situations and make several strategies including early interventions, tracing of infected people, making of quarantine centers, and implementation of social distancing together contributed significantly to control the spread of COVID-19 infection.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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