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Emerging Pandemic COVID 19 vs. SARS-COV-1

Sunanda Dixit, BMS Institute of Technology and Management, India
Mahalakshmi J., BMS Institute of Technology and Management, India
Riya Mahesh, National Public School, India

ABSTRACT

The rising threat of the global pandemic COVID-19 has become the major cause of concern among nations worldwide. The appalling pandemic has aggravated the global health of people making normal life come to a virtual standstill. The purpose of this study is to investigate and compare the similarities and differences between the previous global pandemic outbreak SARS-COV-1 with that of COVID-19. It makes use of a bioinformatic approach to analyze why COVID-19 has made situations uncontrollable as opposed to that of SARS-COV-1 although both belong to the same coronavirus family. It discusses the recent clinical trials that are being conducted to evaluate potential therapeutics to combat the deadly pandemic. There is currently no available vaccine for COVID-19. The current status of COVID-19 research stands progressive in various areas of knowledge. Further studies based on emerging evidence are required to produce drugs that can slow down disease progression and improve survival.

KEYWORDS

Biological Weapon, Clinical Trials, COVID-19, COVID-19 Cure, SARS-CoV-1

INTRODUCTION

Does the COVID-19 named as SARS-CoV-2 (Gorbalenya, A.E., Baker, S.C., Baric, R.S., 2020), pandemic stand as a global-wide curse for humanity? Spike in the number of positive COVID-19 cases and fatalities day after day have brought this fact to the limelight. As of October 23rd, 2020, the outbreak has resulted in 41.7 M, confirmed cases with 1.14M, deaths with recovered cases amounting to 28.3M (John Hopkins Corona Virus Resource Center, daily online updates October 23rd 2020). A similar outbreak was witnessed by the world in 2003 called the Severe Acute Respiratory Syndrome (SARS-CoV-1). One of the most striking similarity is that the virus causing SARS-CoV-1 has 86% genome similarity with that of COVID-19. This fact has been substantiated based on pathogenetic analysis below. Contact tracing was really effective with SARS-CoV-1 largely because symptoms were severe and therefore easier to identify and contain. It lacked the competence to fight the human community which eventually led to its downfall. This doesn't seem to be the case of COVID-19, which seems to have the ability to spread and survive in the human body. Although the latter's death

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rate was higher, COVID-19 has led to more fatalities, more economic repercussions and more social repercussions. Moreover, claims that the coronavirus is being used as a manipulated biological warfare weapon has been storming the Internet. However, this claim is unsubstantiated and scientific evidences have proved that the virus arose naturally.

SARS (Severe Acute Respiratory Syndrome)

Severe acute respiratory syndrome (SARS-COV-1) is a viral respiratory disease caused by the SARS coronavirus. The global spread of the disease had proceeded with such an accelerated speed that hospitals and medical centers witnessed teeming scenarios in a matter of weeks. As of April 14, 2003, a total of 3,169 cases had been reported from more than 20 countries (Shiing-Jer Twu, Tzay-Jinn Chen, 2003)

The first recognized SARS-CoV-1 patient was a 54-year-old businessman who travelled to Guangdong Province, Southern China, on February 5, 2003, and returned to Taipei via Hong Kong on February 21 (WHO,2002). The illnesses in the family members were confirmed by Reverse Transcription Polymerase chain reaction (RT-PCR) testing which was found to be associated with the SARS-COV-1 coronavirus. The doctor who dealt with the man's diagnosis reported being equipped with utmost safety standards to minimize exposure to the deadly virus had also contracted the disease overtime. His illness with symptoms that met the criteria for a probable SARS-CoV-1 case was confirmed by laboratory testing through RT-PCR.

The virus which is potentially assumed to be airborne, spread through close human contact via respiratory droplets as the medium. These droplets are absorbed by the body through mucous membranes of the mouth, nose and eyes. SARS-CoV-1 is categorized as a zoonotic disease which implies that the virus has originated from a wild animal which has later been passed on to human beings. In close comparison to COVID-19, symptoms of a person who had tested positive for SARS-CoV-1 included rise in body temperature, dry cough and shortness of breath which occurred 2-7 days after being exposed to the virus. SARS-CoV-1 was considered a reportable disease (Clinical Guidance on the Identification and Evaluation of Possible SARS-CoV Disease among Persons Presenting with Community-Acquired Illness, version 2, 2004). No vaccine, drug or antibiotic proved to be effective against the virus. The World Health Organization (WHO) meted out certain barrier techniques and isolation measures to curb the spread of the virus to a larger extent.

MEASURES

On perceiving the first positive SARS-CoV-1 case, Taiwan moved to take up stringent measures and isolate all suspected case-patients in negatively pressurized isolation rooms as a part of its early attempt to prevent transference and equipped all healthcare personnel with intensified protection. The specifically designed isolation rooms were pumped up with High Efficiency Particulate Air, negative pressure under constant electronic monitoring, separate bathroom, and antechamber in order to separate the SARS-CoV-1 patient from the rest of the hospital.

In addition to hand sanitizing and other preliminary precautions recommended by WHO, most healthcare personnel used a second layer of protective clothing that were disposed before workers left the antechamber to prevent transmission of the infectious agent from person to person. Successful public healthcare services such as active case detection, social distancing, community quarantine, contact tracing were adopted to eradicate the pandemic.

The outbreak had resulted in nearly 8098 cases and 774 deaths during the infection period (NHS UK, 2020). It was eventually contained by means of syndromic surveillance, immediate isolation of patients, and fully fledged enforcement of community quarantine. By paralyzing all possible forms of human-to-human transmission, SARS-COV-1 was effectively eradicated with no active cases after May 2004.