



Received on 25 April 2020; received in revised form, 17 December 2020; accepted, 20 December 2020; published 01 June 2021

REVIEW ON ORIGIN AND CONCATENATION OF COVID-19

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Keywords:

COVID-19, SARS-CoV-2,
Viruses, Infection blet

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ABSTRACT: Since 2019-November on world facing whole world is facing an unprecedented health problem. The WHO has said that a pandemic infection are coming with a new virus species of coronavirus is called SARS-CoV-2. Coronavirus 2019 is associated with global health and acute coronary respiratory syndrome coronavirus-2. COVID-19 is widely spread through drip channels. The virus causes mild symptoms in many who have manifested many symptoms, dry cough, fatigue, muscle aches and bruises; Common symptoms include diarrhea, colds, hemoptysis, sore throat and runny nose. Severe infections, which are the main treatment options for critical care patients, include severe lung burns, sepsis, ARDS and septicemia. Here we present nine key research questions related to virus infection, releasing anonymous, treatment, pre-symptomatic viruses, diagnosis, vaccine growth, origins of the virus and also viral infections, etiology, viral infections, clinical picture, treatment and infection. Effective treatment is not yet available. Every day there is an increase in morbidity and mortality, and adherence to the instructions of infection prevention and infection should control government organizations are the basis to the fight against viruses.

INTRODUCTION: Written about Coronavirus outbreak in 1981, in the novel is decently fictional and also mostly like a coincidence way. According to Reuters, the coronavirus disease found in the Chinese city of Wuhan in 2019, paralleled Wuhan-400's novel Biological Weapons in the book "The Eyes of Darkness", written by American Kuntz. Roman Kunza predicts the emergence of a deadly virus in 2020 ¹. Pneumonia with an unknown cause was discovered in China Wuhan in China on December 31st, 2019. Work 24/7 to investigate, advise, collaborate with partners to develop countries, increase your supply and manage professional networks.

The epidemic On January 30, 2020, public health was declared a medical emergency ². Historically, coronaviruses have been a large family of the new viruses. Some cause disease in humans, while others many cause diseases in including camels, animals, cats and also bats. As the number of viral infections caused by COVID-19 increased, alarming news from the China began to the spread virus very fast everywhere in the world in the first months of 2020. Originally called - 2019-nCov, now known as the SARS-CoV-2, this disease also called as COVID-19 ³⁻⁴.

The virus is transmitted after person to person and causes respiratory diseases. It is not yet clear how much the virus is transmitted between humans. It is similar to the spread of other viruses, such as the common cold, influenza and SARS. Respiratory drops appear to be transmitted from person to person. According to the CDC, the development period is the estimated at 2 to 14 days. There are currently no known antimicrobial agents (for

QUICK RESPONSE CODE 	DOI: 10.13040/IJPSR.0975-8232.12(6).3069-77
	This article can be accessed online on www.ijpsr.com
DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.12(6).3069-77	

example, antibiotics, antivirals) to treat this virus. No vaccine still now. The depending upon on severity of the disease, treatment is supportive ⁵. Initially, the Chinese government caused by the fact that the Chinese government constantly suffers from diseases of the lower respiratory tract, called new coronavirus pneumonia. Subsequently, the name of the disease recommended by the WHO health organization as COVID-19. Meanwhile, the 2019 International Virus Taxonomy System Committee renamed SARS-CoV to SARS-CoV-2. The WHO announced a global health emergency in late January 2020 ⁶⁻⁷.

In response to the pandemic, there is an urgent need to speed up disease tests, immunizations, new treatments and the development of coronavirus from new plants. Given the limited knowledge available about a new virus, the life-threatening research enquiries need to responded immediately and research methods have been identified as a priority to prevent and control this epidemic.

A serious need is to develop the safe and effective protections, available to the most effective, accessible and suitable population for use. Research is an important integral component of response to be able to identify the key knowledge gaps and also research priorities. The generation of critical scientific information, the most needed medical foodstuffs to contribute to control of COVID-19 emergency ⁸⁻⁹.

Research is an important part of the answer to identify the main information gaps and then research needs and accelerates the generation of the critical medical products for emergency control. This article aims to provide updated statistical information on SARV-CoV-2 and COVID-19. We know that novel discoveries are reported the everyday, so it stands important to monitor through online sources, including the Ministry of Health website and the Inspector General of Sanitation. Currently, it is known that the virus has spread to all countries in the world. The highest rates in the world were recorded in United States, China, Italy, the Spain, Germany, France, Iran, Republic of Korea, United Kingdom and Switzerland. Knowledge of epidemiology is the changing dynamically; li this information about the COVID-19 virus.

2. Origin of COVID-19: Corona viruses have been identified in 1962 for the first time as a novel of the respiratory tract virus in samples were collected from individuals with symptoms of the respiratory tract infection ¹¹. These viruses were commonly found in various animal species, bats, camels, cattle and cats. Very rarely these animal viruses are capable to infect the humans as a result, may spread among these human beings during the epidemics between SARS (2002-2003), MERS (2015) and finally COVID-19 (2019) ¹²⁻¹³. In case of SARS, it is one of the significant flare up caused by these CoVs and the proposed animal responsible for this outbreak is civet cat and in case of MERS dromedary camels are suggested as animal reservoir for CoVs ¹⁴.

But after analysis of gene and protein sequence results had otherwise proven that the above mention animals are intermediate hosts but the causative virus was transmitted from bats. In case of the present epidemic, the observed coronavirus responsible named as SARS-CoV-2 as this too resulting in acute respiratory problems in infected patients. Studies on this reveals that the new version of SARS-CoVs differ from previously identified SARS as it shown only 79% sequence similarity but closely resembling horseshoe bat virus as there is 97.35% identity ¹⁵.

The Metagenomic Next Generation Sequencing (mNGS) results from samples of BALF (bronchoalveolar lavage fluid) isolated from virus infected patients, one being a staff of the Huanan seafood wholesale wet market located in the Hubei Province, China, where this epidemic has been originated ¹⁵⁻¹⁶.

After the initial outbreak later in tenday period further secondary cases have been reported. In addition to this people who haven't been to the market have also started showing symptoms. By this time, it was confirmed that this particular virus spreads through human-to-human transmission from new cases being reported. More cases are added per day in exponential manner and not in much time this outbreak transforms in to an epidemic as it rapidly spreads to other states of china. The first case reported outside China in Thailand just after 14 days and then to other countries of Asia, Europe and USA ¹⁷⁻¹⁸.

3. Coronavirus from SARS to MERS: The new virus as SARS-CoV2, which originated in the China and subsequently spread to the other parts of whole world with nosocomial infections, had a 10% mortality rate and was passed on to 8,000 people are during an eight-months outbreak in the 2002-2003¹⁹. In the 2012, when the Middle East Respiratory Syndrome coronavirus appeared in the Arabian Peninsula, a Middle East Respiratory Syndrome coronavirus spread to 27 countries, of which 2220 cases had a mortality rate of 35.6%. Both are known to be hospital-acquired zoonotic viruses that transmit them from person to person^{15, 20}.

A similar dynamic applies to COVID-19, which originates from Wuhan, and the mortality rate from this infection is around 2%. After CoV enters the cell, different receptors and pathways can be used. SARS coronavirus usually infects on young people and also MERS-CoV on people over 50 years old. The COVID-19 infects these middle-aged people and above. Compared to non-respiratory system complications and MERS-CoV is more involved in the cardiovascular system than SARS-CoV and often requires pressor therapy²¹. The lawsuit claims on COVID-19 has affected cardiovascular system. The acute renal failure is more common than COVID-19 in the SARS-CoV and MERS-CoV epidemic. While radiological results are present in all above three pathogens, continuity in airspace is understood in the form of SARS-CoV and MERS-CoV and COVID-19 surface glass²². Nosocomial infection secondary infection was confirmed with all three pathogens^{14, 23}. There are no studies showing that it is an absolutely effective drug for their treatment²⁴. As far as the epidemic period is concerned, despite the spread of SARS-CoV to smaller areas, it ended in the less than a year, while the MERS-CoV epidemic persisted for a seven years¹⁵.

4. Aetiology: According WHO published report, the primary unknown cases of the aetiology seemed in the China, Wuhan city in initially December, 31st 2019. All infections with influenza virus, avian influenza virus, a severe acute coronavirus syndrome, adenovirus and also MERS-CoV were excepted. And successively they were isolated on July 1, 2020 A previously unknown type of coronavirus, originally called "new coronavirus"

(nCoV)²⁵. The injury was announced on January 30, 2020 and has caused international public health concerns. The WHO was announced a name for new coronavirus disease; a COVID-19 and on February, 11th 2020 and also at present, the virus named as SARS-CoV-2²⁶. The SARS-CoV-2 is a positive, single stranded of the RNA present in virus whose sphere-shaped and envelope surface point proteins create a well-defined projection that creates an image reminiscent of an electron micrograph. Crown of the sun. The virus, identified taxonomically last year, belongs to Nidovirales, family of Coronaviridae and subfamily of Orthocoronavirinae²⁷. According to the genotype, serotype and also coronavirus is separated into the four types, namely α , β , γ and δ ²⁸. The SARS-CoV-2 is a new virus among the seventh coronaviruses and belonging to subtype of β -coronavirus, which can cause human infection²⁹.

5. Pathogenesis: Usually, communication between people is in close contact. Transmission occurs mainly when a person is infected by sneezing through the production of respiratory droplets, such as spread of the influenza; and other breathing pathogens. These drops can be located in nasal mucosa, mouth and lungs of people who have inhaled air. At present also, it remains unclear whether only a person can be infected by COVID-19 virus by touching, infected surface, object and at that time touching their possibly eyes, mouth and nose^{15, 19}. It is currently unknown whether an individual person can become diseased with COVID-19 by contact with an infected area and then physical contact with their nose, mouth and their eyes^{15, 20}.

Generally, like respiratory viruses, when people are most symptomatic, it is considered the most contagious. However, there are cases of asymptomatic infection during early COVID-19 infection. There is insufficient data on the contagious disease and research is ongoing. Determines the pathogenicity of the virus to be classified into the appropriate group; A coronaviruses cause the infections of the lightest difficult respiratory area, serious pneumonia, β viruses are very highly pathogenic and respiratory illness. Beta Coronavirus has previously caused two major human respiratory outbreaks in China (SARS) and Saudi Arabia (MERS)³⁰⁻³¹.

However, it indicates the highest genetic similarity is 96 percentages in the coronavirus genome found in bats and the bat may be its first host. It is unknown at this time what caused the human infection. Did other animals become involved? ³². The protein S is likely to react on the surface of the virus with enzyme 2 (ACE 2) molecules that convert angiotensin into the lungs ²⁹. This ACE receptor appears in alveolar epithelial cells of lung cells (type II). Its greater concentration on men can be explained by the higher incidence of men compared to women. The combination of ACE and SARSCoV-2 can cause an increase in its expression, with consequent damage to the alveoli. The expression of ACE varies by race, which leads to different sensitivities of the disease to its severity ³³⁻³⁴. Viral-ACE interactions may be the basis for the study of possible therapeutic options ³⁵⁻³⁷. After the infection, a viral replication is occurring in the epithelial cells of the respiratory tract and also intestinal tract, causing cytopathy and clinical symptoms.

6. Epidemiology: In adults and children, the new coronavirus has been common pathogen for the upper respiratory tract some contaminations for many years. They are responsible for the infection. The infection usually lasts for several days and the course of the disease is mild ³⁸. The average incubation period for the virus is 6.4 days; but the incubation period is at least 15 days ³⁹. According to WHO the beginning of indications is 1 to 14 days, usually 5 days after the discovery of a new virus, the epidemiological study has begun ^{15, 23}. The first case of COVID-19 was diagnosed on December 12, 2019 with the unexplained of pneumonia, and 27 cases of 7 cases of viral pneumonia were officially announced on December 31st, 2019.

According to WHO the beginning of indications is 1 to 14 days, usually 5 days after the discovery of a new virus, the epidemiological study has begun ^{15,23}. Subsequent infected patients had been no contact with the above site and also disease spread nearly worldwide ¹⁵. Compared to younger patients, patients over 70 years' age have a shorter time from infection to death ⁴⁰. The virus spreads through the droplets and directly contacts the infected person. These cases of transmission of

virus in the air have not been confirmed, although insignificant, require further investigation and should not be ignored during medical procedures involving aerosol formation. This type of virus is found in blood also and infected the people ^{15, 41}. Continuous renal replacement therapy in infected patients has been used in 9% of cases with 3% - extracorporeal membrane oxygenation, 11% of patients have significantly worsened in short period of time, and also many of these patients were multifactorial. He died of failure ⁴².

Etiologic investigations have reported that patients with a history of similar viral medical histories most likely get infected, but this is not a valid point in case of all infected ¹⁴⁻¹⁵. Like the SARS epidemic outbreak occurred during China's New Year (January 10-18), China's most popular traditional festival. Meanwhile, about 3 billion of people travel around country. Similarly, COVID-19 incidents increased rapidly between 10 and 22 January.

Wuhan is an epidemic center with a population of 10 million inhabitants and an important center for the transport network of the Spring Festival. During the spring festival of 2020, the estimated number of tourists increased by 1.7, from 1.82 billion to 3.111 billion. This mass journey has created a favorable condition for spread of this virus, this reason not able to control disease ^{15,43}.

7. Diagnostics// Clinical Progression-Diagnosis: The initial step in the diagnosis of new virus as called SARS-CoV-2. This infection is positive and epidemiological past. The two-stage infection factor is divided as two parts as Group A and B. Group A shows suspicious infection, group B shows symptoms ²⁹.

A-Group (suspected infection):

- Within 2 weeks before the onset of symptoms
- Date of travel and residence in area of that is confirmed or has a residential event.
- Contact with COVID-19 patients confirmed by PCR.
- People who come into contact with the infected area show signs of fever and infection,

- Cases diagnosed in the surrounding environment (family, colleagues, neighbors).

B-Group (Clinical symptoms):

- In the initial stages of disease, other respiratory symptoms, fever, radiologically long-established the pneumonia with the characteristic radiological topographies normal, decreased white blood cell count and lymphopenia.

8. Tests in Laboratory: Leukopenia and Lymphopenia, which is characteristic of the COVID-19 virus infection, occurs in the early stages of the disease and also however, 25-30% patients had leukocytosis⁴⁴. Infected individual people are increased activity of transaminases, lactate dehydrogenase (LDH), creatine phosphokinase (CPK), increased natroponin and sometimes myoglobin. In the patients are the C-reactive protein (CRP) stages were elevated, and while procalcitonin stages are in remain in normal. In acute infections there is an increase in D-dimer u Creatinine levels, in agranulocytosis leukocytosis u an increase in lactate levels. The high levels of the cytokines (GSCF, MCP1, MIP1a, TNF- α , IP10, IL-2, IL-7 and IL-10) were originate in these effected patients who developed plain contaminations and also treated in the severe care unit but were not in the intensive care unit. with mild infection^{15, 40}.

9. Clinical Progression Diagnosis: Prior to SARS-CoV and human CoVs were assumed to cause upper respiratory infections, similar to cold u low-self-limiting respiratory infections. According to reports, SARS-CoV 2 virus was isolated from the pneumonia patient in China and died of coronavirus for the first time. Other rifle-borne routes of infection are clinically related to septic juvenile infectious diseases, as are viral and exacerbated beta-CoVs. There are two MERS CoV and SARS CoV viruses are similar, which have caused a epidemics in few years before, early indications are normally referred to as shortness of breath, cough and fever⁴⁵. Although diarrhea occurs in approximately 20-25% of these patients with the MERS-CoV and also SARS-CoV are infection, few patients with the COVID-19 report intestinal symptoms. In another study of the 99 patients, in addition to the previous results,

confusion, chest pain, nausea and also vomiting were observed⁴². On radiography or computed tomography of the examined patients, it was found that the unilateral or bilateral involvement of patients were admitted to an intensive care unit was compatible with viral pneumonia and bilateral areas of merging of leaflets and bilateral sub segments were observed^{40, 46}. During the consolidation study of the 41 patients were hospitalized, most patients reported fever, myalgia, dry cough, fatigue, nausea, headache, hemoptysis and also diarrhea⁴⁰.

According to the study, about half of these patients were diagnosed with diseases such as hypertension, cardiovascular and diabetes diseases. In addition, the patient developed dyspnea on average eight days after admission and was accompanied by abnormal chest CT and pneumonia. The complications are including the acute cardiac injury, ARDS, pneumothorax and secondary infection. Similar to the previous data, the patient's radiography or chest computed tomography showed the bilateral or unilateral pulmonary involvement and compatible with the viral pneumonia. The patients are in intensive care unit had multiple bilateral areas of lobular and sub-segmental consolidation⁴⁰. Previous experience with disease outbreaks has shown that the clinical course of the disease is more severe⁴⁷.

The molecular methods, diagnostic tools, viral culture and serology. The common diagnostic method is RT-PCR (RNA) in respiratory tests like ophthalmic tumors, nasopharyngeal aspirin, heavy desulfurization, sputum, and molecular methods. In particular, samples from the minor respiratory tract may offer the higher viral load and also genome fraction and then samples from the high respiratory area. These methods are useful in expressions of quick evaluation of the results, showing the structure of the genome and the viral load⁴⁶. Antibacterial activity is frequently less than molecular methods, and research is usually carried out by review.

Viral culture is a longer method than other approaches. Until other diagnostic methods are available clinically, culture is most useful in the early stages of dissemination. In addition, virus cultures can be used for virus and virus therapy and vaccine testing¹⁴⁻¹⁵.

10. Radiological Investigations: The use of chest X-rays and CT scans is very important to check the disease. Pneumonia confirmed by radiology with behavioral ulcers also one symptoms of group B. The changes found are typical of the severe bilateral infezioni respiratory infections in the SARS. The maximum common radiological structures in the early stages are opacity and interstitial changes in the glass on the adhesive surface. The disease progresses are turbidity becomes spare rounded, and infectious scratches will appear.

The most serious case, rebar changes have occurred due to lack of practice, which is a very characteristic image^{40,48}. Computed tomography of the lungs were revealed five stages are infection. Initially, there were still no clinical manifestations or laboratory diseases. Examination of the chest reveals contraction, enlarged lymph swellings, foci scattered in middle of the lungs, frequently surrounded by the spherical opacities and also consolidations are may occur. The air bronchogram is come to be visible. The second stage is seen within the 1 to 3 days after onset of the symptoms. Due to bleeding and hyperemia of the alveolar ca membrane, images of the alveolar cavity and exudative edema were observed. The 3rd stage characterized by speedy development of change. Within 3-7 days of the onset of disease, the changes designated in the additional stage will intensify, leading to an increase in ultraviolet and glandular tumors and air bronchography.

The fourth stage of consolidation lesions resulting from the deposition of fibrin in the lumen and in an interstice of alveoli. In the consolidation of the 5th phase, the variations are developing. Interlobular segmental condensation dens linear densities extending along with the bronchi are visible⁴⁰. The importance of the CT testing has been confirmed by the fact that in an individuals were infected with the SARS-CoV-2 virus, changes in lung tomography images appear between 80-100%^{15,40}.

According to the North American Radiological Association, because the number of the molecular tests is not sufficient to confirm the infection of SARS-CoV-2, computed tomography is essential to diagnose suspicious infections^{44,49}. A preliminary report from China indicated that the COVID-19 test

has been widely used for lung ultrasound examination.

11. Confirmation of Infection: Towards a positive epidemiological history. In patients with the clinical symptoms. The SARS-CoV-2 virus contamination must be long-established by reliable of the diagnostic test. Due to the high number of the viral copies in airway at initial stage of the disease and a positive test result, a respiratory sample should be collected, a blood test may provide a false and negative result. Extract biomaterials from bronchoalveolar lavage fluid (BAL) or trans tracheal aspirate (TTA); swelling, nasopharyngeal cravings and untreated sputum. Molecular tests are such as the RT-PCR (Reverse Transformation Polymerase Chain Reaction), RT-LAMP (Reverse Transfer LOOP-Isiredmal Amplification Isulation), PCR-R - Polymerase chain reaction reverse time) and RT-iiPCR (Reverse Transformation Isolated Isothermal Polymerase Chain) is based on the detection of genetic material of the virus in sample.

Currently, near 7 potential diagnostic medical tests are available to the confirm of SARS-CoV-2 virus infection. And unfortunately, the most of them are tough to access was used primarily for the scientific purposes. In addition, two tests were conducted to identify SARS-CoV-2 in further pathogens^{15,29,45}.

12. Treatment: Patients with the COVID-19 should be treated at elected centers. It must be used in patients with the shortness of hypoxemia, breath and convulsions. Oxygen therapy should start with 5 L-1 flows, and then gradually increase the flow to maintain appropriate SPO2 (adult SpO2 \geq 90% and pregnant SpO2 92-95%, pediatric SpO2 \geq 90%), and further block the airway and lungs. PO (94% in children with shock, coma, suffer from pneumonia, respiratory diseases, central cyan, shock, coma or seizures).

The patients are with hypoxic respiratory distress and also ARDS must undergo mechanical ventilation. These attempts were made to use the mechanical non-invasive ventilation and also high nasal oxygen (HNO) DNA flow. Though, these methods are not suitable for patients with the severe hypercapnia, hemodynamic instability, multiple sclerosis and dementia. The World Health

Organization believes; these approaches are may be useful in the people with mild to the moderate a non-progressive of hypercapnia.

But these patients must be the monitored closely for deterioration in respiratory of the function. If HIV does not improve within 1 h of use, pneumonia and the mechanical ventilation of the lungs should be started^{15, 45}. The in addition, there are respiratory maintenance mechanisms that can increase the risk of virus infection⁵⁰.

Pulmonary ventilation should be used-the standard dose should not exceed the estimated body weight (PBW) of 4-6 mg/kg, and the respiratory rate should be as low as possible to keep the pH above 7.2. If an adverse event occurs (eg, out of sync, pH <7.15), PBW can accept up to 8 mg kg⁻¹. At the end of stimulation, it is recommended to use very high end-expiratory pressure (PEEP) to obtain high doses of pneumonia without having to deal with large amounts of pneumonia. In fact, the PEEP value range is 13 to 24 cm. Pulmonary embolism in patients with severe COVID-19 and severe COVID-19 is usually very high, so the stimulation pressure exceeds 13 cm H₂O and the plasma pressure does not exceed 25–27 H₂O (data from Professor Paolo Pilloso).

For patients who do not respond to standard treatment, breathing therapy in normal areas can achieve good results. However, consideration should be given to when medical personnel should wear protective clothing. It is recommended that patients stay for more than 12 h per day as clinical conditions permit. Avoid interrupting the ventilation system.

The World Health Organization (WHO) guidelines mention relatively rare uses of solar radiation (ECA), but at the same time are limited to centers of professional and also technical supervisors. Some other experts are giving cautious about using COVID-19 in ECVO, stressing that this method is not applicable in many cases⁵¹.

No specific drug treatment is possible for the new coronavirus 2019-nCoV. Some centers combine dananavir or lopinavir with rifanovir and osmivir and quinolone hydrochloride for antiviral therapy⁴⁵. In addition, no information about air interferon-iron interferon was reported. Unfortunately, there is

no randomized clinical study confirming the effectiveness of the any specific pharmacological on treatment option.

Unless the dominant position of microbial bacteria is established, antibiotic management should not be carried out. In confirmed the bacterial infections, extensive herbal antibiotic treatment should be avoided. On the contrary, antibiotic treatment should be used as soon as possible without wasting treatment.

For patients with circulatory insufficiency, norepinephrine may be recommended to avoid fluid retention and protect the genitals. Glucocorticoids should not give to the patients regularly. In the septic shock treated with only booster drugs, it is recommended to inject 50 mg of hydrocortisone every two hours. Neuromuscular blockade should be limited to patients with significant ventilatory dyschrony, which prevents the development of established atmospheric volumes or rapid-onset hypoxemia or hyperpia.

CONCLUSION: In this Review, we recapitulate the current information on the origin and evolution of COVID-19 in the World with confirmed by detailed and exact reports issued by WHO. This review also highlights the potential and diversity of spillover of this pandemic specifically in World population. By the surge in demand of testing kits for initial detection, many companies came forward along with premium institutes came forward in making and produced in a very less period really been a primary weapon in fighting. However, whole World had been successful in fighting COVID-19 so far but the aftermath of this pandemic on country's economy, education, employment and growth at higher stake. In order to overcome these a schematic and strategic approach much needed at this critical time to regain and restore.

ACKNOWLEDGEMENT: Nil

CONFLICTS OF INTEREST: The authors declare that they have no conflict of interest.

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How to cite this article:

Dasari PR and Pilli S: Review on origin and concatenation of Covid-19. *Int J Pharm Sci & Res* 2021; 12(6): 3069-77. doi: 10.13040/IJPSR.0975-8232.12(6).3069-77.

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