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A Pandemic Curse for Humanity: Review on Covid-19

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Abstract

Covid-19 is a respiratory virus that transmitted through direct contact with an infected person by respiratory droplets when the infected person sneezes ,cough &through saliva,nose droplets eject. Corona virus causes respiratory tract infection including pneumonia, cold, sneezing, coughing, fever, and tiredness while in animals it causes upper respiratory diseases. Corona virus causes a disease which comes under the category of acute infectious diseases caused by SARS-CoV-2.According to WHO diseases of Covid-19 is a worldwide epidemic illness. The disease of Covid shows mild symptoms in most of the cases, but usually it rises with people of old aged groups or patient having low immunity. European Centre for Disease Prevention and Control (ECDC) advice to avoid public place and close contact to infectious persons. Corona virus first introduce from Wuhan market China at 7 Jan 2020. This review will introduce a general overview of corona virus and describe the clinical features, evaluation, and some basic parameter of treatment.

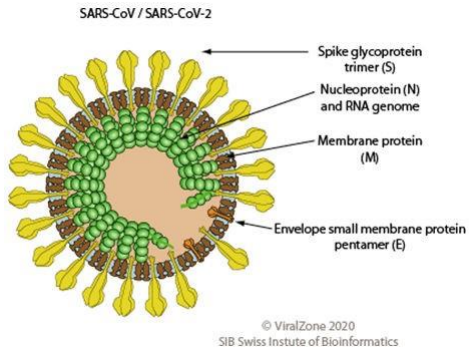
Keywords:COVID-19; Emerging coronavirus; SARS- CoV-2,diagnosis; MERS; Respiratory syndrome

Introduction

Coronaviruses are the viruses that belong to the category or class Coronavirade and subclass Orthocoronavirinae, order Nidovirales. The name “coronavirus” is derived from the latin word Corona and the greek word Krone which mean a structure like crown. The (SARS)severe acute respiratory syndrome and the (MERS) Middle East respiratory syndrome began to emerge in 2002 and 2012, respectively. Recently, a virus called a novel coronavirus, severe acute respiratory syndrome coronavirus 2 (ARS) (SARS-CoV-2), causing coronavirus disease 2019 (COVID-19), emerged in late 2019, and it has posed a global health threat, causing an ongoing pandemic interritories and many countries [1].Health workers worldwide & medical departments or Organizations are currently making efforts to control or prevent from further disease outbreaks caused by the novel CoV (originally named 2019-nCoV), which was first identified in CityWuhan, Hubei Province, China, on 12 December 2019. The World Health Organization (WHO) announced the official designation for the current CoV-associated disease to be COVID-19, caused by the SARS-CoV-2On 11 February 2020. The primary cluster or blocks of patients was found to be connected with the Huanan South China associated Seafood MarketinWuhan& people were shocked in worldwide due to the pandemic [2].Coronavirusbelong to the family of Coronaviridae&the subfamily of coronavirus known as Coronavirinae, the members of which infect a broad range of hosts,and transmitted very quickly, producing symptoms and diseases ranging from the common cold to severe and ultimately fatal illnesses, such as SARSsevere acute respiratory syndrome, MERSMiddle East respiratory syndrome, and, presently, COVID-19. SARS-CoV-2 is considered one of the seven members of the CoV family that infect humans, major common symptoms are fever, headache, drycough ,illness etc [3]. Coronavirus is a infectious disease which is transmitted from one subject to another’s and it is also transmitted through animals.In domestic animals, infections with CoVs are associated with a broad spectrum ofpathological conditions and higher cahnces to infect from one animal to another one. Apart from virusone is infectious bronchitis virus, canine respiratory CoV, and mouse hepatitis virus, CoVs are predominantly associatedor linked with gastrointestinal diseases and infect respiratory track very easily [4]. It is essential to identifying the origin and source of SARS-CoV-2, the introduction and pathogen’s evolution will be helpful for disease surveillance or evolution [5]. The most common symptoms associated with COVID-19 are as follows like fever, cough, dyspnea, expectoration, headache, and myalgia or fatigue drycough, illness, loss of epitide etc. the Virus (SARS-CoV-2):Coronaviruses are positive-sense RNA viruses having an extensive and promiscuous range of natural hosts and Transmitted from one person to another one &affect multiple systems and copmartments of human structure [6,7].Coronaviruses effect human respiratory tracks &can cause clinical diseases in humans beings, that may extend from the common cold, fever, cough to more severe respiratory diseases like SARS severe acute respiratory syndrome and MERSMiddle East respiratory syndrome [8,9].The recently emerging SARS-CoV-2 in China and caused a pandemic situation in the worldwide population, leading to disease and causes infection in respiratory tracks, the goverments of many countries take strict action against people which not adept and follow the guidelines and protocols of government [10].Based on molecular characterization or molecular structure and characterization, SARS-CoV-2 is considered a new Betacoronavirus belonging to the subgenus Sarbecovirus and associated with the class of antiviral [3]. A few other critical zoonotic viruses (MERSMiddle East respiratory syndrome-related CoV and SARS-severe acute

respiratory syndromerelated CoV) belong to the same genus. According to the survey and research the virus belong to the family of antiviral drug category. And infect the human respiratory tracks and causes symptoms like illness fatigue etc.

Figure1: (SARS)-CoV-2 structure.



Coronaviruses can spread in the following ways:

Coronavirus can spread thrugh many ways and it is transmitted from one person to another person and it is also spread through sneezing andcoughing without covering the nose ,mouth can disperse droplets into the air and the chances of contamination is high.Touching to oneanother's or shaking hands with a person who has the virus can pass the virus between individuals. Making contact with a surface or object that has the virus and then touching the nose, eyes, or mouth can minimizes the chances of inflammation. However, it is unclear whether this also applies to human coronaviruses.The(NIH) National Institutes of Health suggest that several groups of people have the highest risk of developing complications due to COVID-19. It is also findout in the study that the higher age group has a higher chances of risk of infection.

List of people which are easily infected by the virus:

- Pregnant Women
- Young children's
- Chronic patient like diabetes, heart disease, cholesterol etc
- People age group over 65.

According to the study coronaviruses will infect most of the people at some time during their whole life journey. Coronaviruses, spread easily from one to another and it is also called as contagious disease in which healthy people are separate out from infected ones. To prevent from transmission of virus, people should stay at their home, quarantine and rest while symptoms are active. They should also avoid close contact with other people and also with their near one's . Covering the entrance point such as mouth and nose with a tissue, mask , soft cotton cloth while coughing or sneezing and also wash their hands regularly can also prevent transmission from viruses. It is important to dispose the tissues, gloves, mask, headcover, facecover after use and it is essential to all that they should maintain a high standard cleanliness and personal hygiene around their home, office,enviorment.

Table1: According to the WHO the Director-General also noted that the risk of serious complications increases with age.

Stage Of Severity	Rough percentage of people with COVID-19
Mild disease from which a person can recover	More than 80%
Severe disease, causing breathlessness and pneumonia	Around 14%
Critical disease, including septic shock, respiratory failure, and the failure of more than one organ	About 5%
Fatal disease	2%

Common symptoms include:

The symptoms like cold or flu usually set in from 2–4 days after a coronavirus infection and are typically mild. However, symptoms vary from person-to-person,vary from climate to climate , vary from infected or containment zone and some forms of the virus can be fatal. Following symptoms shows are as follows:

- Fever
- Dry cough
- Sneezing
- Loss of epitide
- Breathing problem
- Illness
- Breathlessness
- It make take 14 days to infect from the person who are already infected
- Body pain
- Feel low energetic.

Diagnosis

various ways to diagnosed patient which are suffering from coronavirus

- Respiratory anguish or problem:- The rate of respiration is equal or more than 30 breathes per minute is belong to the category of good range.
- If patient had critical problem related to respiratory failure so it should go for mechanical ventilation.
- Oxygenation index (Pao2/Fio2):- it is the most important parameter & should be equal to or less than 300mm/Hg. It should always in the range of 94-100.
- Pulse oximetry or oxometer oxygen saturation at rest:shouldbeequal to or less than 93% [11].

Treatment

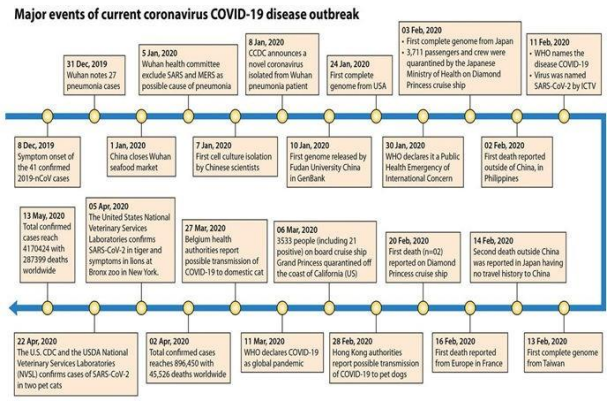
According to the research there are some ways through which we can prevent ourself & public through isolation, separation and home quarantine. Home isolation is the first step to manage children and youth with mild symptoms and no underlying chronic conditions.

Hospitalization is the second step to control the virus ,moderate cases should be managed in hospital, monitoring vital signs and oxygen saturation, it is mandatory to observe regularly the sign and symptoms .Supportive care for these children and youth includes temperature control with isolate, bed rest, hydration, healthy diet, good and healthy nutrition.Patient counseling play a major role in the treatment

Confidentially : Encourage care seeking,Public awareness programme conducted by government or health organization, Strict rule and regulation followed by the government [12].

SARS-CoV-2 Transmission, Spread, and Emergence

Figure2: Timeline depicting the significant events that occurred during the SARS-CoV- 2/COVID-19 virus outbreak. The timeline describes the significant events during the current SARS-CoV-2 outbreak, from 8 December 2019 to 13 May 2020(14).



The Role of Traditional Medicine

According to the research & data analysis on June 01, 2020, more than six million confirmed cases of Coronavirus Disease 2019 (COVID-19) were reported globally. Currently,there is no medically approved treatment or any other medicament for COVID-19. However, efforts are made by medical professionals underway to find the right treatment in almost all parts of the world, including traditional medicine in Africa and some parts of North, South Asia and modern medicine in several European countries and the United States. In the search for potential and effective treatments of COVID-19, the World Health Organization (WHO) welcomes innovations such as traditional medicine, repurposing drugs, and developing new therapies all over the world. Africa and some parts of Asia have along history of using traditional medicine, and the WHO World Health Organization recognizes many benefits for traditional medicines. The medical Organization play a vital role to formulate drug products which are used in the Pandemic.

The WHO World Health Organization has been working with countries to ensure the safest, Potent, and most effective use of traditional medicines, and it will continue to give support in exploring & evaluating the benefits of traditional medicines in the prevention, control, and treatment, cure of infections.

In China, and some other countries scientists, medical department and doctors have recommended using Traditional Chinese Medicine (TCM) as a cure for COVID-19. During the (SARS) Severe Acute Respiratory Syndrome epidemic, TCM Traditional Chinese Medicine was effective in the treatment of infected people.

The Government of china has ordered the Use of TCM herbs and leafs to treat COVID-19 patients. In china it was reported that about 85% of COVID-19 patients received combined treatment with TCM and regular medication. The TCM Traditional Chinese Medicine remedies for COVID-19 are even being sent to some countries after finding the effectiveness of TCM herbs such as Italy, Iran, etc, as international aids. However, scientists from other countries claim that it is dangerous to support therapies that have yet to be proven safe and effective.

The COVID-19 pandemic has fuelled global initiatives to develop vaccines and identify pharmaco therapies.The urgency of the current pandemic demands immediate and pragmatic clinical responses. A surprising dissonance between conventional medical research and clinical practice can be observed during this pandemic, challenging fundamental assumptions of evidence-based medicine and conventional biomedical practice.

Traditional and complementary medicine during COVID-19 pandemic:

The recent corona virus disease-19 (COVID-19)pandemic has uniquely challenged medical research community or organization worldwide due to absence of any vaccine, medicnes or proven therapy.

Re purposing of already available drugs and medicaments or medicine is a prudent strategy for immediate management of those severely affected by the disease. To that end, clinical interventional studies or clinical trials are being conducted with multitude of drugs ranging from seemingly innocuous like zinc to potentially toxic drugs. Traditional and complementary medicine (T&CM) especially traditional herbal medicines, herbal leafs however, find little mention in mainstream discourse of COVID-19 pandemic, and these herbal medicament play a vital role to prevent from the infections.

Table2: Comparative number of interventional studies in various trial registries involving traditional /complementary medications compared to other specific treatments of interest.

Clinical trial registry	Number of registered interventional studiesa	Number of studies involving traditional/ complementary medicationsb (%	Number of studies on specific treatments of interest (%)	Example(s) of herba remedies being evaluated and registered under various trail registriesc
1.Clinicaltrials. Gov	1,257	22 (1.7)	Hydroxychloroquine/ chloroquine: 202 (16.1) Ivermectin: 23 (1.8) Colchicine: 14 (1.1) Low dose radiotherapy: 12 (0.9) Oncological drugsd: 30 (2.4)	Acacia Senegal (Senegalia senegal) Nigella sativa Caesalpinia spinosa extract Acai palm (Euterpe oleracea)
2. EU clinical register	237	2 (0.8)	Hydroxychloroquine/ chloroquine: 38 (16.0) Ivermectin: 3 (1.3) Colchicine: 5 (2.1) Oncological drugsd: 11 (4.6)	-
3.Chinese clinical trial register	336	90 (26.8)	Hydroxychloroquine/ chloroquine: 25 (7.4) Oncological drugsd: 2 (0.6)	Liquorice (Glycyrrhizae glabra Chinese skullcap (Scutellaria baicalensis) Honeysuckle (Lonicera japonicae Huaier granule (Tremetes robiniophila) Exocarpium citri grandis
4.Clinical	28 21 (75)		Oncological drugsd:	Ashwagandha/India

Table3: Drug Repurposing Treatments/combinations In Development.

Candidate	MoA/ Indication	Status/ Clinical trials	Sponser/Producer
Kaletra (lopinavir/ritonavir) Combinational therapy	HIV protease inhibitor	>10latest stages	AbbVie
		clinical studies	
	HIV-1 infection	NCT04321174	
COVID-19 antibody therapy	Antibody	Development stage	AbCellera Eli Lilly
Remdesivir (GS - 5734)	Block RNA Polymerase Ebola	Orphan drug destination for Gilead 9 clinical studies worldwide NCT04323761 NCT04257656 NCT04315948	Gilead sciences

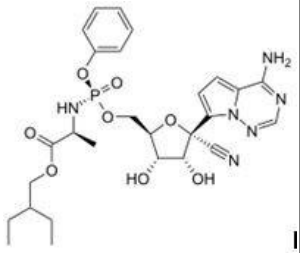
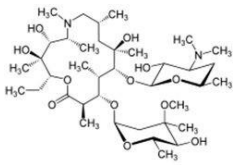
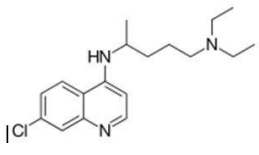
			
Chloroquine 	Endosomal acidification fusion inhibitor Anti-malerial	>10 studies worldwide >10 clinical studies in china ChiCTR2000029609 NCT04261517 >10 trials in	Medical institutions Worldwide Medical institutions Worldwide
Azithromycin 	Antibiotics	combination with othetr drug NCT04322396 NCT04321278 NCT04322123	

Table4: Vaccines In Development.

Candidate	Status/clinical trails	Sponsor/producer
Coronavirus vaccine (self-replicating RNA)	Preclinical Development	Arcturus Therapeutics
Sputnik V	Phase I/II clinical trial in	Gamaleya Research
	Russia	institute
Gam-COVID-Vac,		
Gam-COVID-Vac Lyo		
	NCT04436471	
	NCT04437875	
NVX-CoV2373	Preclinical Development	Novavax Inc
Coronavirus vaccine		
siRNA	Preclinical Development	Alnylam and Vir
		Biotechnology

List if vaccines used in the pandemic:

Co-vaccines

Remdesivir

Sputnik V

Pfizer

Conclusion

The COVID-19 pandemic is spreading across the globe at an alarming rate. Corona virus was spreading human to human, spreading from one contact to another through various ways such as transmission by close contact via droplets generating by coughing, smooching ,sneezing, kissing and hand shaking. Corona virus are the class of virus which infect easily when coming in contact of infected person and may transmit through pet animals such as dog, cat. So avoid as less as contact and seprate or isolate them if observed any sign and symptoms of infection activities like diarrhea, cold, fever. According to world health organization WHO and MHRA avoid contact with people having symptoms like drug cough, sneezing, moderate fever etc, also avoid contact in public place, market & sick people. It is essential for pregnant ladies and people having chronic disease to isolate in home andprevent from virus and maintain social distancing as more as possible. A healthy and nutrition diet, hydration etc play an important role to prevent from virus. Government makes strict rule and regulation to adapt guideline issued by MHRA, WHO, CDSCO etc.

Current treatment strategies to prevent from viruses are as follow: healthy diet, nutritional diet, exercise, meditation, isolation, home quarantine, hydrated body, wear gears like mask , head cover, gloves, and maintain a high standard hygiene and cleaniness.

Patient counseling, home isolation, social distancing and public awareness programme can minimizes the chance's of introduction of pathogen in a health body and prevent from COVID-19.

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