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Covid-19: A Pandemic Situation — Review Article

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ABSTRACT

Now COVID-19 has been declared as the pandemic disease, i.e. global health emergency by WHO. Till 13/4/20 number of people got affected is 18,64,629 and 1,15,286 death all over the world. Rate of infection is increasing with passing days not only in India but in other countries also. The viruses are zoonotic and causing severe respiratory diseases in human. In India till 13/4/20, infected people are above 9,352 and death pole crosses 324. Today everyone is known with the name of this disease, but simultaneously the detailed review and precaution measures should also be known to control or stop the further spread. To study COVID-19, the pandemic situations. To explore the origin and spread of the corona virus and COVID-19. The preventions and treatment on it. Interventions by government. Awareness about the disease and pandemic. The data was collected from different websites, news, books and articles. Even after the disease become pandemic, many people are unknown with the facts, the severity of global health outbreaks, precautions to take and importance of intervention by the government as about quarantine and lock down. This review study reaches up to all the facts regarding COVID-19, and it's pandemic to spread more awareness.

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INTRODUCTION

Severe Acute respiratory syndrome corona virus, i.e. SARS-CoV-2 has spread vigorously from Wuhan city of Hubei province of China to the rest of the world. And now covid-19 was declared as a pandemic, i.e. global health emergency by WHO. Till date 13/4/2020 around 9352 cases of corona virus and 324 death have been reported in India. And worldwide it is 18,64,629 confirmed cases with 4,40,922 recovered and 1,15,286 deaths till 13/4/2020. This article gives a details view about the new virus (WHO, 2020). The world is updating information and new findings of this new virus very rapidly. Origin and spread. There are a few assumptions regarding the origin of the virus. In the initial stage of the outbreak in December, it was grossly assumed about the origination of virus from the market of Wuhan where the first COVID-19 case was reported. In labs of Wuhan, the long-term experimental project was taking place by which researchers found the identity of the virus, which was similar to nocturnal mammal origin, but they also have bio safety measures. Some theories are also claiming that the virus was generated (scientists studying on virus genome also agree that it is not impossible) Simultaneously new researchers say that it was accidental findings, and no incidences

were found to disagree (Law, 2020).

Bat research: The outbreak in 2003 also shows the traces of virus spread by the bat as many labs, including BSL-4 in Wuhan were working to collect the viruses from bat to follow the study.COVID-19 corona virus has a very similar resemblance to the SARS Corona virus, so it was legally called SARS-Co-V-2 (Law, 2020). In the past: In November 2002, the first atypical pneumonia case was reported in Guangdong, China, then it became an epidemic (Firstpost, 2020). Spread as a pandemic: In 2019, the number of severe cases of pneumonia with unknown cause was found in the capital city of Hubei province and major transportation Club of China during December 2019. The cases had the most number of adults from Wuhan. Initially, many cases were found with similar exposure from seafood animal trade market of Huan. Refer Figure 1 — seafood market.

Figure 1: Seafood market

The surveillance system was initiated to send the sample of patients for investigation in labs. On 31 December 2019 China notified the outbreak to the WHO and on next day market closed. On 7th January virus was identified as corona virus, which was mostly like bat origin and SARS- CoV. The environmental sample from the market was tested positive for the origination (Singhal, 2020). On 11 January 2020, the very first patient died. It was spread massively in China during the New Year, and later on, new cases were found in other areas or countries. The spread was found from the people coming back from Wuhan. On 23 January 2020 transmission to health care's from the infected one was described and all the population of the city took under lock down with full restrictions of transportation in or out. Later on, the human to human transmission appeared in other countries (Rothe *et al.*, 2020).

All the airports in many countries were provided machines to screen Covid patients among passengers. Still, then information got about asymptomatic spread or transmission among people before the onset of symptoms. Those people were kept isolated and screened for more than 14 days. The graph has increased exponentially, and study models reported an epidemic doubling time of 1.8 days (Li *et al.*, 2020). On 12th February China recorded an increase in cases by 15000 in a single day On 5th March 2020, 96000 cases worldwide reported out of which 80,000 were from China and remaining from 87 other countries and one international conveyance. But they are increased in countries like Italy, Iran and South Korea, and among them 20% are critical, and 25% are recovered where 3310 have died. In India 3 cases have reported by 2 March 2020 which further increases up to 29 cases till 5th March 2020 mainly in Agra, Jaipur and Delhi from tourist from China and their contacts. Like this gradually cases increases all over and those are Quarantine With their contacts. Updates on the date 31 April 2020 India — CHART It is a third corona Virus outbreak among human population to in last two decades has given an alarming alert sign to the world health organization (Coronavirus origin, nd).

Aim

To study the pandemic situation of COVID-19

Objectives

This study aimed

1. to explore the origin and spread of coronavirus and COVID-19.
2. the preventions and treatment on it.
3. interventions by the government.
4. awareness about the disease and pandemic.

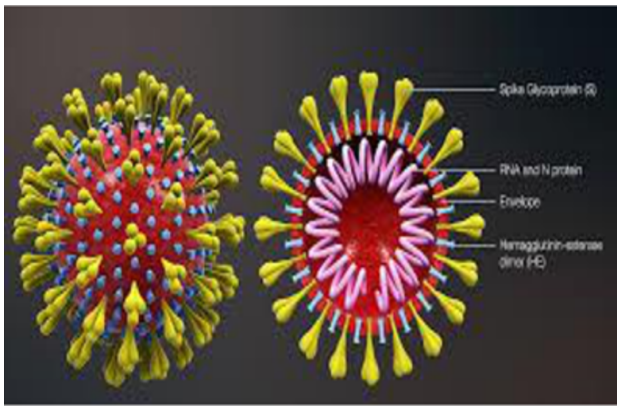

Figure 2: Coronavirus

MATERIALS AND METHODS

About the coronavirus

Coronaviruses are a group of related mammals and birds in humans; coronaviruses cause respiratory tract infection that can range from mild to lethal. Refer Figure 2 — coronavirus. Virus Classification in Following Table 1.

Genera

Alphacoronavirus, Betacoronavirus, Gammacoronavirus, Deltacoronavirus

Synonyms

Coronavirinae: Types of corona viruses

Common human corona viruses. There are four common human corona viruses:

1. 229E
2. NL63
3. OC43
4. HKU1

They usually cause mild to moderate symptoms.

Table 1: Virus Classification

Unranked	Virus
Realm	Riboviria
Phylum	Incertae sedis
Order	Nidovirales
Family	Coronaviridae
SubFamily	Orthocoronavirinae

Other human corona viruses

Three additional corona viruses originated as animal infections Trusted source. Over time, these viruses evolved and were eventually transmitted to humans. Following corona viruses pose more severe risks to human health.

1. SARS-CoV,
2. MERS-CoV
3. SARS-CoV-2

Corona condition COVID-19 is a viral spread due to SARS to pneumonia cases with an unknown cause with noticed in Wuhan city in December 2019. All the cases invented Indian where connected a related directly or indirectly to the seafood market. The virus origin is assumed from an animal source where the exact source is still unknown. Within a few months, SARS-CoV-2 has spread to hundreds of countries around the world after being transmitted through person-to-person contact (Neuman *et al.*, 2011).

Transmission

Social contact with people within 6 feet is the main reason for transmission of COVID-19. That may be due to physical contact, shaking hands to affected ones or touching the contaminated surfaces. While coughing or sneezing openly, or using hands to cover mouth, then the virus may enter in the body while touching to own face or simply being near to the infected person who coughs talks or sneezes. It gives more exposure to the infected respiratory droplets, the CDC says. All those contaminated droplets land in mouth, eyes or nose or it gets settled on hands then may enter in the body while rubbing hands, touching face and possibly the person gets infected (Coughing and Sneezing, 2020). Refer Figures 3 and 4 — Transmission of coronavirus.

Clinical features — how to identify?

They vary from asymptomatic to symptomatic or at the state of respiratory distress in acute stage syndrome, multiple organ dysfunctioning.

Clinical features- common

Fever (not in all), sore throat. Dyspnea, headache, fatigue, Myalgia, Breathlessness, Conjunctivitis Pneumonia, Respiratory failure with ARDS and at last death (Chen *et al.*, 2020b). The fatal rate of adult patients who were hospitalized is between 4 % to 11 %, but the general rate is between 2% to 3%. Rate of infection in newborn to children is comparatively less than in adults (Chen *et al.*, 2020a).

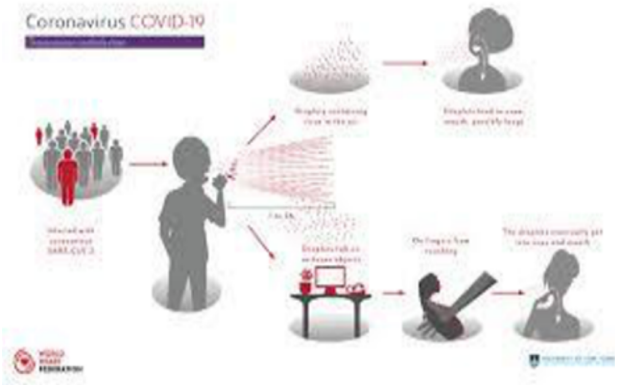

Figure 3: Transmission of coronavirus

Diagnosis

Signs of fever cough sore throat, the history of traveling in isolated areas, international flights, travel to China or other suspected areas can be included to detect suspect for the infection. Still, it cannot be specific to diagnose as few cases are found asymptomatic with average temperature normal

body temperature. A positive test result is significant to be confirmative from suspected.

For the specific molecular test, samples can be collected from throat swab/nasopharyngeal swabs/sputum/endotracheal and aspirants and bronco alveolar lovage or in some cases, stool and blood examination can also be useful. But the specific tests are not found yet. In India, a sample of suspected cases is sent to the designated laboratories or National Institute of Virology in Pune. Specific tests are yet to be available.

Other lab investigations — not exact but can be useful

1. WBC count
2. CRP
3. Chest X-ray
4. CT. (Huang *et al.*, 2020).

Differential diagnosis(D/D)

1. All type of respiratory infections like influenza, para influenza, respiratory syncytial virus (RSV), adenovirus, human metapneumovirus, non-COVID-19 coronavirus.
2. Organisms - especially atypical e.g. chlamydia and mycoplasma.
3. Infections caused by bacteria.

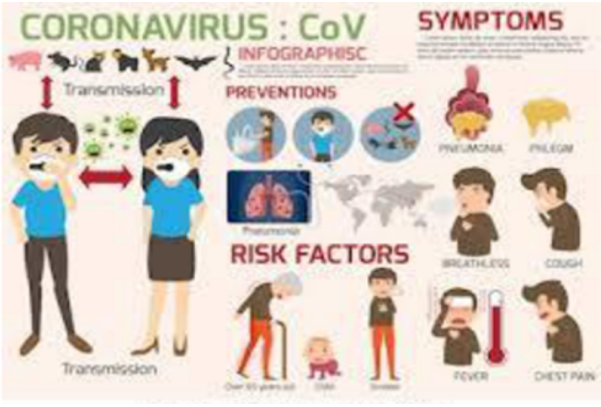

Figure 4: Transmission of coronavirus

RESULTS AND DISCUSSION

Treatment

The exact treatment on COVID-19 is unknown yet, but the supportive and symptomatic treatment on the right is beneficial.

1. First step -Isolation and preventing transmission.
2. Basic principles include — maintain hydration, proper nutrition, hygiene, controlling body temperature (fever) and, sneezing, cough etc. respiratory infections.
3. All the confirmatory cases should be treated by a physician.
4. Corticosteroid treatment.
5. Oxygenation and ventilation in the case of hyperoxia, oxygen supply should be done via mask an.d nasal prongs. We can use non-invasive ventilation or higher floor nasal cannula (HFNC).
6. WHO published critical care management for COVID-19 (WHO, 2020).
7. In case of SARS and MERS — Antiviral drugs such as ribavirin, lopinavir-ritonavir shows better results.
8. In case of all affected children, primary treatment was useful with no intensive care.
9. Lipid cellular therapy.

Ayurvedic study suggests

1. According to Ayurveda experts, daily consumption of Chyavanprash (1tablespoon) helps to boost the immunity and simultaneously to prevent the spread.
2. As per yoga guru Ramdev, Tulsi and Giloy play a remarkable role in fighting against COVID-19 (Writer, 2020).

Prevention

If you get sick, get isolated in the home from your loved ones to avoid the risk of infection -Take precautions while caring for sick loved one, wipe down shared surface more often washing hands time to time, maintain hygiene, don't touch your face again and again with hands avoid coughing or sneezing on others, cover the face while coughing and sneezing with a cloth instead of hands, drink warm water plenty -wear a mask, use of alcohol-based hand sanitizers or hand wash is essential, Take immediate care on symptoms like fever, cough and difficulty in breathing. Follow quarantine (Nerd and Meyerowitz-Katz, 2020).

Social practices in quarantine

1. Patients with respiratory symptoms and those who got in contact with sick ones or had international flights recently must be screened by healthcare.

2. Such people should be monitored with all primary health care like wearing a mask or maintaining social distances.

3. Isolation and testing should be done on all the suspects in the respective organized government hospital.

4. Pneumonia and ARDS acute respiratory distress syndrome are noticeable symptoms, so the patients having these symptoms should be given priority about the treatment.

5. All the healthcare centers should be aware of the pandemic city and its possible management (Nerd and Meyerowitz-Katz, 2020).

Role of the Indian government

1. The government of India gives an immediate response to the threat.

2. The nation was quarantined to avoid the risk of infection and spread to close contact with another infected person

3. In major cities in hospitals, the screening wards were given with the isolation facilities.

4. WHO warned to prepare personal protective equipment (PPE) and to meet the growing demand as the novel coronavirus rapidly spreads across the globe? PPE supplies allowed to be increased by 40% to meet requirements.

5. Twenty-six active pharmaceutical ingredients APIS and formulations, antibiotics, hormones like paracetamol, metronidazole, tinidazole, vitamin B1, B6, B12, hormones having immediate effects like project progesterone have been restricted from India to export.

6. presently, due to a rise in cases, Indian government applied the "complete lockdown."

7. Supported to " stay home, stay save and save the nation" kept on " work from home."

8. All the import and export are restricted at the cellular level of the nation. (Investindia, 2020).

CONCLUSION

This virus challenged the world with its global public health outbreak. The human is fighting for survival on earth. Ti is the third outbreak to emerge in the human population so drastically. Such more pandemic situations can take place due to any causative organism in future. So only instead of getting curbed in a current, outbreak, we must take care to prevent future outbreaks of any kind and devise the compressive measures.

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Conflict of Interest

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