

## Coronavirus – A Deadly Outbreak in Wuhan Province of People Republic China

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**In June 13, 2012, coronavirus infection started in Saudi Arabia. Coronavirus was first recorded as being responsible for common flu in 1960. During 2002-2003, coronavirus was studied as a simple, non-fatal virus. The major types of coronavirus are severe acute respiratory syndrome (SARS), Coronavirinae, Arteriviridae, Roniviridae, Coronaviridae. Recent outbreak took place in China which causes severe acute respiratory syndrome (SARS) that came from Wuhan seafood Market. This paper illustrates the brief outline of recent epidemic of novel Coronavirus named 2019-nCoV in China. Preventative measures taken in China as well as in India are also discussed in this draft.**

**Keywords:** Severe Acute Respiratory Syndrome (SARS), Coronavirinae, Arteriviridae, Roniviridae, Coronaviridae.

First case of corona virus infection was observed in Saudi Arabia, specifically in Jeddah, in June 13, 2012. After that the virus continued spreading overseas in many countries in Asia, Africa, Europe, and America and mainly in countries like Qatar, Dubai, Abu Dhabi, Egypt, Syria, Kuwait and Iraq. According to European Centre for Disease Prevention and Control these countries fell under the areas of extreme risk<sup>1</sup>. Corona virus was initially taken to be responsible for common flu in 1960. It was examined as a simple, non-fatal virus, during 2002-2003. The novel Corona virus (2019-nCoV) which originated in China, spread to many countries like Thailand, Vietnam, Hong Kong, Singapore and the United

States of America and it caused severe acute respiratory syndrome (SARS) in patients resulting in mortality rate of 3.4%. The coronavirus family was founded by the international committee on taxonomy of virus in 1975<sup>2</sup>.

Other human coronavirus are

1. MERS (beta coronavirus) that is responsible for Middle chest inconsistent respiration syndrome.
2. SARS (beta coronavirus) is the cause of acute respiration syndrome.
3. 229E is a RNA virus with the family alpha coronavirus of the subfamily coronavirinae, all together Arteriviridae, Roniviridae, coronaviridae is divided with Nidovirale. OC43 is a human coronavirus which spreads due to common cold.

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There are two domains of P proteins i.e. P1 and P2 in which domain P1 has its cognate receptor arises from a change in the P protein supports membrane<sup>3</sup>.

#### Survey of Coronavirus Cases on Around World

In china, cases are more than 376 (other countries 40,000 till 10 February 2020) and death rate reached up to 910 and per day 97 are adding in the count from 9th February in numbers. As of now 14.92% is a minor threat, 4.05% minimum threat, extreme threats are 35.39%, a significant threat 21.85% and a serious threat 23.79%<sup>4</sup>.

As per updated newstill 13-02-2020, Malaysia has overall 19 coronavirus cases out of which 6 are Malaysians and 13 are Chinese national<sup>5</sup>.

#### Recent outbreak of coronavirus in China

Coronavirus make a large family (viruses) which causes respiratory and intestinal infection in animals and human i.e. MERS and SARS. The infection spreads into one person over 8000 by given data of 30 countries and the death toll is 800 patients. As per a study, it is a known fact that the virus started with sea food and animal market. As a result, the market was being closed and marked as infected. Environment was being cleaned and the samples were tested from other markets also<sup>7</sup>.

2019-nCoV virus is the part of the ongoing epidemic which emerged from Wuhan, Hubei province in China. It started in December 2019. The origin of this virus is still unknown. The reported number of cases and the death toll has already surpassed the SARS and MERS numbers. Till date, the reported number of cases are nearly 43,104 and the death toll has reached at 1018 deaths. More than 4000 people have been recovered and continuous efforts are being made to ensure no further spread by constantly monitoring the unusual patternsThe

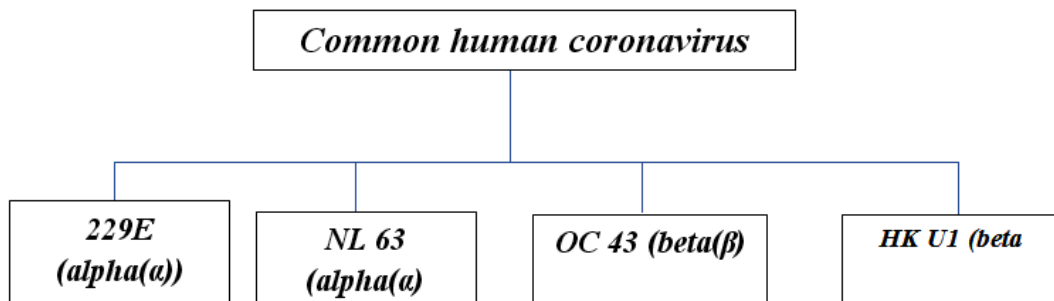
above Fig. 2 shows the image of coronavirus and Fig. 3 shows how coronavirus spread from one human to another through coughing and sneezing. It starts with headache, sore throat and shortness of breath in the initial coronavirus. Later fever chest pain, rapid heartbeat, breathing difficulties ends with kidney failure. During 2019, cases of coronavirus started from a cluster in Wuhan, where sea food market is located and wild animals are served at the restaurant. It is an animal to human transmission for some cases. In some countries human to human transmission takes places<sup>10</sup>.

A US citizen died due to coronavirus in Wuhan China. A 60 years old died in Jinyintan Hospital in Wuhan. According to US Embassy in Beijing. British government arranged a charter

**Table 1.** Survey of coronavirus cases<sup>6</sup>

S.No.	Country/Area	Cases
1.	China	2761
2.	Hong Kong	8
3.	Macau	5
4.	Japan	4
5.	Republic of Korea	4
6.	Vietnam	2
7.	Singapore	4
8.	Australia	4
9.	Malaysia	4
10.	Thailand	5
11.	Nepal	1
12.	United states of America	5
13.	Canada	1
14.	France	3

Recent update of China total cases till 17<sup>th</sup> February 2020 is 70,000 out which died persons are 1,770<sup>6</sup>.



**Fig. 1.** Classification of common coronavirus in humans

flight which took off from Wuhan carrying around 200 people for the final evacuation from China<sup>11</sup>.

**Medical Assistance and Preventive Measures Taken In China**

Clinical laboratory management and data are medical records. Laboratories made for especially coronavirus testing and analysis are Chinese Academy of Medical Sciences, Academy of Military Medical Sciences, Wuhan Institute of Virology, and Chinese Academy of Sciences. All upper respiratory-based tests were obtained from all patients at the time of admission in all above laboratories, which were maintained by labelling viral transport medium. Coronavirus in RT-PCR protocol, explains RT-PCR detection details. Respiratory virus i.e. virus (H1N1, H3N2, H7N9) B virus is syncytial virus, parainfluenza virus, SARS coronavirus and MERS coronavirus<sup>12</sup>.

Vaccines are available for IBV (Avian infectious bronchitis virus), TGEV and canine coronavirus but are not effective for all types of coronavirus. Vaccines such as PEDV, is very useful in such cases where it infects another veterinary animals from already infected animal. For SARS-coronavirus, there are a lot of vaccines which are developed but none have been approved as of now. Therapeutic SARS-coronavirus antibodies are generated and retrieved it which can be used SARS-coronavirus outbreak<sup>6</sup>.

Effective therapeutics or vaccines, measures to control human coronavirus in public health systems, diagnostic testing and quarantine need. In international places and government entities where it is too critical to control the infections. Eating veterinary animals (pigs), those are transmitted by PEDV outcomes as transmission of viruses<sup>13</sup>.

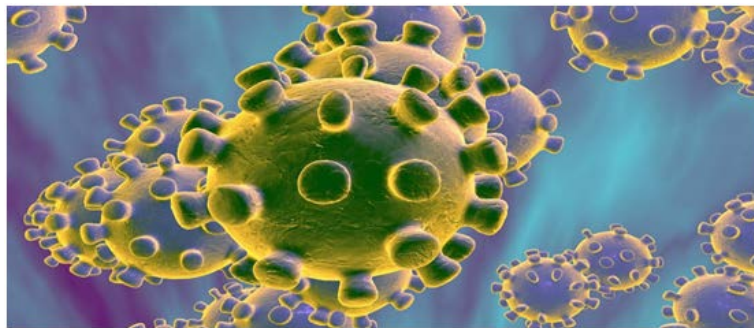


Fig. 2. Shows the coronavirus image<sup>8</sup>

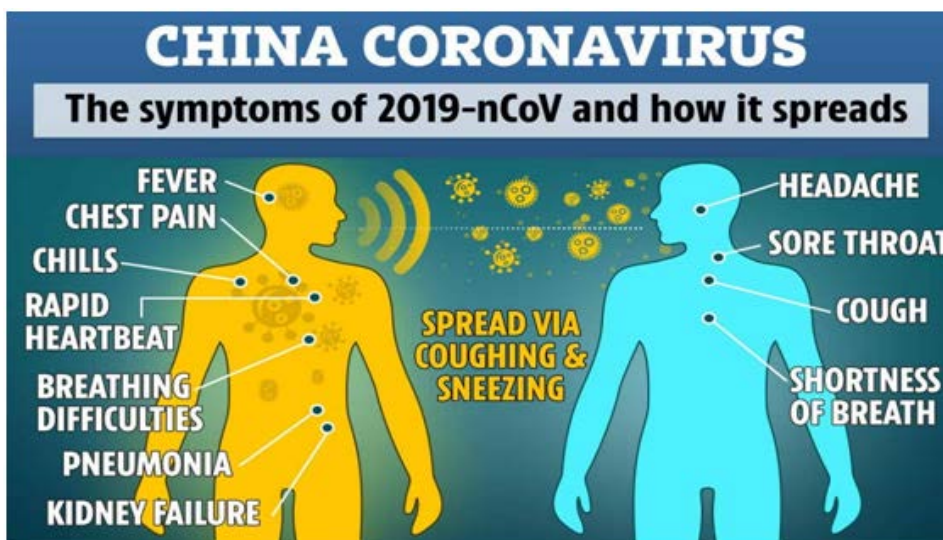


Fig. 3. Spreading of coronavirus in humans from one person to another<sup>9</sup>

China has built a hospital to fight coronavirus, the area is 60,000sq-m has a capacity of 1000 beds and 30 intensive care wards. They have a team of 7000 carpenters, plumbers, electricians and other specialist these people work 24 hours to build the hospital. They have also dispatched 1400 army medicines to Wuhan other than that, second hospital being built-in Wuhan<sup>14</sup>.

In the duration of controlling the coronavirus, China has lost more than 700 people and found 31000 infected all over world. China had built Beijing Xiao Tangshan hospital, in 2003 within 7 days, during the SARS outbreak<sup>15</sup>.

#### **Preventive Measure Taken by Government of India**

India has brought Indian students from china after the outbreak of coronavirus in china. The students have been kept in an isolated camp in Manesar and provided them all the facilities of i.e. accommodation, administrative area and medical facilities for monitoring the students with the help of doctors. The capacity of the camp is 50 students and barracks are subdivided. Those living in sectors are not permitted to be with each other<sup>16</sup>.

India screened 1118 flight till 10th February DGCA, testing flight crew with breath analyser (BA) test for 15 days at Kerala's, Calicut, Kannur, Trivandrum and Cochin airports. Also 3252 people are under observation in Kerala and around 1.9 lakh passengers screened at an airport with other 9452 persons under surveillance<sup>17</sup>.

#### **CONCLUSION**

Coronavirus infection started in Saudi Arabia. Firstly it identified as a cause of common cold in 1960. Next outbreak took place in China in Wuhan seafood market from where coronavirus start spreading to many countries of the world including USA which cause severe acute respiratory syndrome. In china around 70,000 cases of coronavirus are reported, out of which 1,770 died due to coronavirus till 17th February 2020.

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many other viruses including SARS family in UIET, Panjab University. So, we have stated our affiliations as UIET, Panjab University.

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