



**A REVIEW ON COVID-19**

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**ABSTRACT**

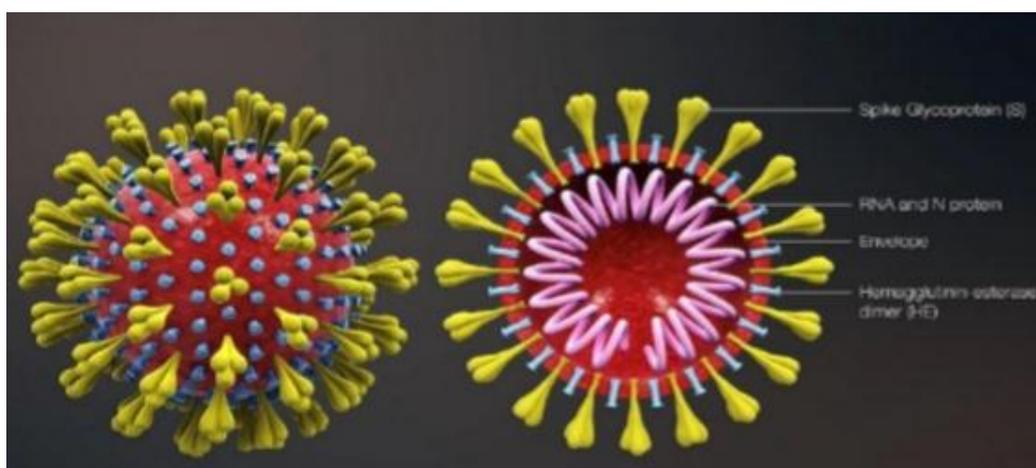
Corona virus causes respiratory infection and it is characterised by pneumonia, cold, sneezing and coughing while in animal it causes diarrhoea. It mainly affects the upper respiratory tract. Corona virus diffused human to human or human to animal via airborne droplets. Corona virus invades in human cell through membrane ACE-2 exopeptidase receptor. WHO and ECDC recommended avoiding public place and closing contact to infected persons and pet animals. Firstly Corona virus (2019 nCoV) was isolated from Wuhan of China at 7 Jan. 2020.

**KEYWORDS:** COVID-19, WHO, SARS-CoV, Wuhan.

**INTRODUCTION**

A novel coronavirus is designated as Covid.-19. It firstly appeared in Wuhan of the China at the end of 2019 (Shrikushna et al., 2020). Firstly corona virus was identified as cold in 1960. Approximately 500 patients were identified as Flu-like system as per Canadian study 2001, 17-18 cases of them were confirmed as infected with corona virus strain by polymerase chain reaction. Corona was handled as simple non-fatal virus till 2002. Several reports have been published with the proofs of spreading the corona to many countries including United States America, Hong Kong, Singapore, Thailand, Vietnam and in Taiwan in 2003. Various cases of severe

acute respiratory infection caused by corona and their mortally more than 1000 patients were identified in 2003. This was the black year for microbiologist. When microbiologist was started focus to recognize these problems. After a long research they conclude and understand the development of disease and discovered as corona virus. But till total 8096 patients were reported as infected with corona virus. So in 2004, World health organization and centres for disease control and prevention declared as "state emergency". COVID-19 was firstly reported and isolated from pneumonia patient belongs to Wuhan of china (WHO, 2020; Zhu et al., 2019).



**Fig.1: Structure of coronavirus (Gaiki & Tathe, 2020).**

**Etiology**

Corona viruses are mainly responsible about 5-10% acute respiratory infection. It has been cleared that approximately 2% of the population are deemed healthy

carriers of corona virus. COVID-19 characterized by respiratory infection and common cold. COVs present either pulmonary or extra pulmonary features. COVs are the member of Roniviridae, Arteriviridae and

Coronaviridae families. The Coronaviridae can be divided into 4 genera including alpha-COV, beta-COV, gamma-COV and delta-COV. SARS-COV is responsible for the COVID-19 pandemic. The COV is sensitive to heat and ultraviolet light. SARS-COV-2 bind to their target site which expressed in the lungs with the help of angiotensin converting enzyme-2 (ACE2) (Chen *et al.*, 2020; Cascella *et al.*, 2020).

### Clinical features

The COVID-19 is characterized clinically by various features, ranging from asymptomatic state to severe acute respiratory syndrome and also multi organ dysfunction. The common clinical features of COVID-19 include fever, cough, sore throat, headache, fatigue, breathlessness and also conjunctivitis. The infected person with COVID-19 may get pneumonia, respiratory

failure and death at the end of first week. The progress of disease is associated with extreme rise in inflammatory cytokines like IL2, IL7, IL10, GCSF, IP10, MCP1, MIP1A and TNF $\alpha$  (Chen *et al.*, 2019).

### Transmission of corona virus

Corona virus transmitted from human to human and human to animal through close contact with a human as well as animal who has viral symptoms like cough and sneezing. Generally corona virus was spread via airborne droplets. Virus was multiplied in ciliated epithelium that caused cellular damage and infection at infection site. According to a report (which has been published in 2019), corona virus enter into human cells through the Angiotensin converting enzyme 2 (a membrane exopeptidase in the receptor) (Woo *et al.*, 2009; De *et al.*, 2007; Letko *et al.*, 2019).

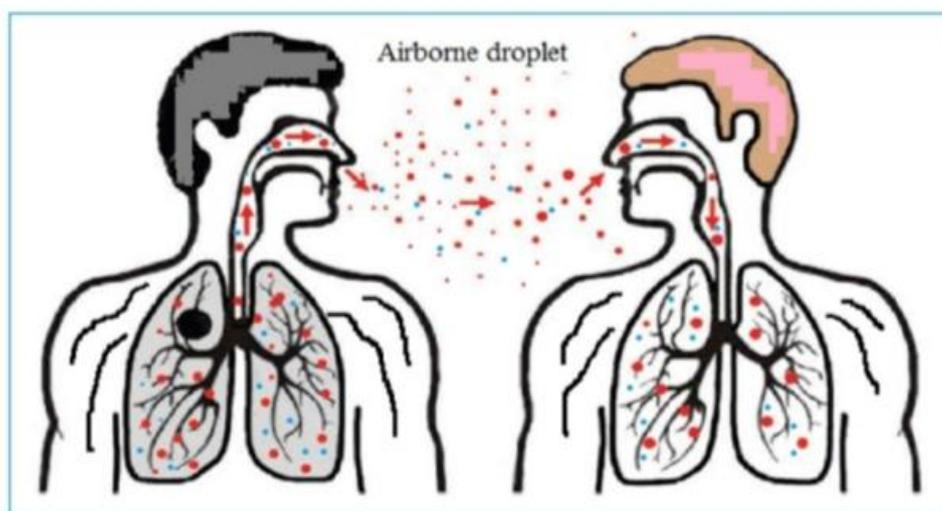


Fig. 2: Transmission of corona virus via airborne droplets (Dharmendra *et al.*, 2020).

Risk of serious complications increase with age- According to WHO.

Table.1: Risk of serious complications (Shrikrushna *et al.*, 2020).

Stage of severity	Rough percentage of COVID-19 affected people
Mild disease	More than 80%
Severe disease (breathlessness and pneumonia)	Around 14%
Critical disease (septic shock, respiratory failure and failure of organ more than one)	About 5%
Fatal disease	2%

### WHO Coronavirus Disease (COVID-19) Dashboard

Global data (31 January-11 June 2020)

105621 daily new cases

Total confirmed cases-7255960

Total death-412583

### Prevention

There are some guidelines provided by WHO and European Centre for disease prevention and control (ECDC) for the prevention of COVID-19. These guidelines are mainly for the healthy profession to regulate during the care of infected patients with

COVID-19. It has been cleared from various studies that COVID-19 may be transmitted from human to human and with the help of airborne droplets but no one reported solid evidence about the transmission of COVID-19. WHO reported some guidelines for the prevention of COVID-19 like isolate the infected patient from other family members, droplet precaution and airborne precaution. ECDC also reported the information leaflet to human beings such as to keep away from sick people and avoid visiting market. Some other WHO guidelines are wash your hand properly with soap and

water, use alcohol based solution before eating and avoid the contact with animals (ECDC, 2020).

### Diagnosis

The WHO suggest about the diagnosis of COVID-19 to collect the samples from the upper respiratory tract as well as the lower respiratory tract. It may be collect through the expelled sputum, bronchoalveolar lavage and endotracheal aspirate. This collected sample assessed for the testing of COVID-19. If a positive result obtained then WHO recommended to repeat the test for re-verification purpose (Hassan *et al.*, 2020).

### CONCLUSION

Over the past 50 years exposure of various types of corona virus that cause several types of human and animal disease. It has been concluded that COVID-19 is a serious infectious disease which is caused by SARS-COV-2. Future research will be continue on COVID-19 for the analysis of various aspects such as viral replication and pathogenesis.

### REFERENCES

1. Chen, Y. Liu, Q. and Guo, D. (2020). Emerging coronaviruses, genome structure, replication and pathogenesis. *J. Med Virol.* 92: 418-423.
2. Cascella, M. Rajnik, M. Cuomo, A. Duhlebohn, S.C. and Napoli, R.D. (2020). Features, Evaluation and treatment coronavirus (COVID-19). Statpearls publishing. Treasure Island.
3. Chen, N. Zhou, M. and Dong, X. (2020). Epidemiological novel coronavirus pneumonia in Wuhan, China. 395: 507-513.
4. De Souza Luna, LK, Heiser, V. Regamey, N. Panning, M. Drexler, J.F. Mulangu, S. (2007). Generic detection of coronaviruses and differentiation at the prototype strain level by reverse transcription-PCR and nonfluorescent low-density microarray. *J Clin Microbial.* 45: 1049-1052.
5. European Centre for disease prevention and control (ECDC). (2020). Case definition and European surveillance for human infection with novel coronavirus.
6. Gaiki, A.G. and Tathe, S.V. (2020). A review on COVID-19. Spread and its adverse impact on global. 4: 477-485.
7. Hassan, S.A. Sheikh, F.N. Jamal, S. Ezeh, J.K. and Akhtar, A. (2020). Coronavirus (COVID-19). A review of clinical features, diagnosis and treatment.
8. Kumar, Dharmendra, Malviya, R. and Sharma, P.K. (2020). Corona Virus. A Review of COVID-19. Department of Pharmacy, Faculty of Medicine and Allied Sciences, Galgotias University, Gautam Buddha Nagar, Uttar Pradesh, India.
9. Letko M, Munster, V. (2020). Functional assessment of cell entry and receptor usage for lineage  $\beta$ -coronaviruses, including 2019-nCoV. *bioRxiv*.
10. Unhale, S.S. Ansari, Q.B. Sanap, S. Thakre, S. Wadatar, S. Bairagi, R. Sagrula, S. and Biyani, K.R. (2020). A review on corona virus (COVID-19). 109-114
11. World Health Organization. (2020). WHO Statement Regarding Cluster of Pneumonia Cases in Wuhan, China Geneva [updated 9 January 2020 and 14 January 2020].
12. Woo, P.C. Lau, S.K. Huang, Y. Yuen, K.Y. (2009). Coronavirus diversity, phylogeny and interspecies jumping. *Exp Biol Med (Maywood).* 234: 1117-1127.
13. Zhu, N. Zhang, D. Wang, W. Li, X. Yang, B. Song, J. (2020). A Novel Coronavirus from Patients with Pneumonia in China, 2019. *New England Journal of Medicine.*