

# Novel Coronavirus 2019 (nCoV)

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**N**ovel Coronavirus 2019 (nCoV-2019) and coronaviruses (CoV) are large virus family containing strains which trigger deadly diseases in mammals and birds. Coronavirus are zoonotic and can be transmitted from animals like camel, cattle, cats and bats to humans<sup>1</sup>. Some important strains of coronaviruses are nCoV-2019, beta-coronavirus others include Middle East Respiratory CoV (MERS-CoV) and Severe Acute Respiratory Syndrome CoV (SARS-CoV) which are responsible for causing deaths in humans. Usually CoV cause common cold like illness and few other ailments including SARS-CoV and MERS-CoV. It is believed that original host of both coronaviruses were probably bats.<sup>1</sup> Coronavirus were first identified in 1960s, it got name from corona or crown of sugary proteins that projects from the envelope and surround the virus. This is an enveloped virus comprising of a non segmented positive sense RNA and belongs to coronaviridae family. This virus has longest genome of RNA, having single strand of nucleic acid which is almost 26,000 to 32,000 bases long.<sup>1</sup> According to detailed investigation, transmission of SARS-CoV among humans was reported from civet cats while dromedary camels were responsible from transmission of MERS-CoV to humans.<sup>2</sup> Collectively both viruses were responsible to cause diseases among more than 10,000 people with massive mortality rates of 37% for MERS-CoV and 10% for SARS-CoV.<sup>3</sup>

A new strain known to be nCoV 2019 has not been reported among humanoids previously. Series of pneumonia cases were reported in Wuhan, capital of Hubei province of China during December 2019 showing clinical presentation resembles to viral pneumonia. After thorough investigation and sequencing analysis of samples taken from lower respiratory tract confirmed the

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presence of coronavirus initially named as nCoV-2019 and SARS-CoV II. During this investigation to reach the final conclusion a high number of around 800 people including health care workers were confirmed to have disease in Wuhan and some other provinces of China while some cases were reported from neighbouring countries like Japan, Thailand, South Korea and USA.<sup>4</sup> It is proven that it can spread from person to person among close contact through airborne droplets produce sneezes or coughs of infected people, same in the case with influenza or other respiratory pathogen spread.<sup>5</sup>

People infected with 2019-nCoV infections, show symptoms like fever, tastelessness, cough and shortness of breath. Appearance of symptoms may take place within two days to fourteen days. Thus the virus can be spread through airborne droplets which can be entered through mouth or nose of people who are in close contact with infected individual. This may also infect the lungs. In a recent outbreak in Wuhan, China many of the patients with respiratory ailments triggered by nCoV-2019 had been shown to have connection to live animal and large seafood market, shows a spread from animals to human. While large numbers of infected people had now connection with animal market, indicates human to human blowouts.<sup>6</sup>

According to latest reports regarding nCoV-2019 pandemic, around 400 thousand patients have lost their lives while more than 7 million have confirmed with the presence of virus with mild, moderate or serious complications while 3.43 million have been recovered and discharged from hospitals.<sup>7</sup> First case of nCoV-19 was appeared in February this year in Pakistan when a 50 years old male returned after Umrah visited the hospital with mild symptoms became a suspicious case of nCoV-19 with severe symptoms was died and reported positive for nCoV-19 on the next day. Similarly a 58 years old woman who was a heart patient also presented to hospital and her relatives hide her history of travel abroad remained 4 days in hospital and died of nCoV-19 as tested positive at the end. These two cases remained responsible to spread nCoV-19 in around 100 people and all the staff around the later was treating her as non-infectious

patient<sup>8</sup> though left the world making the whole community in vulnerable situation.

Healthcare staff on the other hand also became the hot target and engulfed Chinese physician named Li Wenliang who for the first time sounded the alarm on nCov-19 became an eternal hero and first healthcare professional who embraced death due to this disease during first week of February.<sup>9</sup> Similarly, a young physician who was a part of screening team for nCov-19 and involved in handling such patients physically was the first Pakistani healthcare professional demised in last decade of March<sup>10</sup> in Gilgit-Baltistan whereas a 38 years old nurse working in isolation ward of COVID-19 patients was also died of this infection.<sup>11</sup> As many as 2.2 thousand healthcare professionals got infected from nCov-19 till the beginning of June of which 24 consisting of 16 Doctors, two nurses, and six paramedics passed away.<sup>12</sup> In Pakistan a total of around 99 thousand cases have been confirmed with more than two thousand deaths whereas around 34 thousand patients have been recovered.<sup>13</sup>

Molecular based laboratory diagnosis of 2019-nCoV using nasopharyngeal swab is available now in various countries including Pakistan, though serological techniques are under development to find the optimisation of procedures. World Health Organization (WHO) has standardized its recommendations to reduce the exposure and further spread of diseases as follows;<sup>14</sup>

- i. Use disposable tissue/cloth during coughing and sneezing and wash hands immediately.
- ii. Take infection control measures to visit close contacts having fever and cough.
- iii. Seek immediate medical care in case of fever, cough and breathlessness.
- iv. Raw and undercooked foods must be avoided.
- v. Avoid visiting live animal markets as much as possible especially in areas of nCoV endemic.
- vi. Avoid using meat or meat products of sick animals.
- vii. Protect others by avoiding spit in public.

No vaccine is developed and prevention from disease remains the only available option to handle this deadly virus till today. Better implementation and practice of infection control measures at public level is the key to prevent from this disease. It is important to create the awareness about prevention among general population through all available channels of communication including electronic and print media.

**Conflict of interest:** None declared.

## References

1. What is coronavirus. (Accessed on 5th February 2020) Available from URL: <https://www.sciencealert.com/coronavirus>
2. Coronavirus. (Accessed on 5th February 2020) Available from URL: <https://www.who.int/health-topics/coronavirus>
3. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet* 2020; 395(10223): 497-506.
4. World Health O. Novel coronavirus – Thailand (ex-China). (Accessed on 4th February 2020) Available from URL: <http://www.who.int/csr/don/14-january-2020-novel-coronavirusthailand/en/>
5. How 2019-nCoV Spreads. Centres for disease control and presentation. (Accessed on 5th February 2020) Available from URL: <https://www.cdc.gov/coronavirus/2019-ncov/about/transmission.html>
6. 2019 Novel Coronavirus (2019-nCoV) Situation Summary(Accessed on 5th February 2020) Available from URL: <https://www.cdc.gov/coronavirus/2019-nCoV/summary.html>
7. Covid-19 Coronavirus pandemic. (Accessed on 7th June 2020) Available from URL: <https://www.worldometers.info/coronavirus/>
8. The News. (March 19, 2020). Corona claims first victim in KP. (Accessed on 7th June 2020) Available from URL: <https://www.thenews.com.pk/print/631280-corona-claims-first-victims-in-kp>
9. Leung H. An eternal hero, whistle blowing doctor. (Accessed on 7th June 2020) Available from URL: <https://time.com/5779678/li-wenliang-coronavirus-china-doctor-death/>
10. Yusufzai M. The News, Mach 23rd, 2020. (Accessed on 7th June 2020) Available from URL: <https://www.thenews.com.pk/print/633187-doctor-dies-in-gb-after-contracting-coronavirus-from-patients>
11. Malik A. The News, April 11th, 2020. (Accessed on 7th June 2020) Available from URL: <https://www.thenews.com.pk/print/642662-gujrat-hospital-isolation-ward-nurse-dies-of-coronavirus>
12. Bhatti MW. The News, June 2nd, 2020. (Accessed on 7th June 2020) Available from URL: <https://www.thenews.com.pk/print/666539-facing-covid-19-and-violence-simultaneously-healthcare-community-in-pakistan-has-lost-24-colleagues-so-far>
13. Government of Pakistan. Live Update, June 7th, 2020. (Accessed on 7th June 2020) Available from URL: <http://covid.gov.pk/>
14. World Health O. Novel Coronavirus (2019-nCoV) advice for the public. (Accessed on 4th February 2020) Available from URL: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>