

I had >95% homology with the bat coronavirus and > 70% similarity with the SARS- CoV. Environmental samples from the Huanan Sea food market also tested positive, signifying that the virus originated from there [7]. The number of cases started increasing exponentially, some of which did not have exposure to the live animal market, suggestive of the fact that human-to-human transmission was occurring [8]. The first fatal case was reported on 11th Jan 2020. The massive migration of Chinese during the Chinese New Year fuelled the epidemic. Cases in other provinces of China, other countries (Thailand, Japan and south Korea in quick succession) were returning from Wuhan. Transmission to healthcare workers caring for patients was described on 20<sup>th</sup> Jan, 2020. By 23<sup>rd</sup> January, the 11 million population of Wuhan was placed under lock down.

Cases of COVID-19 in countries outside China were reported in those with no history of travel to China suggesting that local human-to-human transmission was occurring in these countries [9]. Airports in different countries including India put in screening mechanisms to detect symptomatic people returning from China and placed them in isolation and testing them for COVID-19. Soon it was apparent that the infection could be transmitted from asymptomatic people and also before onset of symptoms. Therefore, countries including India who evacuated their citizens from Wuhan through special flights or had travelers returning from China, placed all people symptomatic or tested them for the virus.

### 13 CONVALESCENT PLASMA THERAPY

Guo Yanhong, an official with the National Health Commission (NHC), stated that convalescent plasma therapy is a significant method for treating severe COVID-19 patients. Among the COVID-19 patients currently receiving convalescent plasma therapy in the virus-hit Wuhan, one has been discharged from hospital, as reported by Chinese science authorities on Monday, 17th February 2020 in Beijing. The first dose of convalescent plasma from a COVID-19 patient was collected on 1st and 9th February 2020 from a severely ill patient who was given treatment at a hospital in Jiangxia District in Wuhan. The presence of the virus in patients is minimized by the antibodies in the convalescent plasma. Guiqiang stated that donating plasma may cause minimal harm to the donor and that there is nothing to be worried about. Plasma donors must be cured patients and discharged from hospital. Only plasma is used, whereas red blood cells (RBC), white blood cells (WBC) and blood platelets are transfused back into the donor's body. Wang alleged that donor's plasma will totally improve to its initial state after one or 2 weeks from the day of plasma donation of around 200 to 300 millilitres.

Since at this time there are no approved treatments for this infection, prevention is crucial. Several properties of this virus make prevention difficult namely, nonspecific features of the disease, the infectivity even before onset of symptoms in the incubation period, transmission from asymptomatic people, long incubation period, tropism for mucosal surfaces such as the conjunctiva, prolonged duration of the illness and transmission even after clinical recovery. Isolation of confirmed or suspected cases with mild illness at home is recommended. The ventilation at home should be good with sunlight to allow for destruction of virus. Patients should be asked to wear a simple surgical mask and practice cough hygiene.

The median time from onset of symptoms to dyspnea was 5 d, hospitalization 7 d and acute respiratory distress syndrome (ARDS) 8 d. The need for intensive care admission was in 25-30% of affected patients in published series. Complications witnessed included acute lung injury, ARDS, shock and acute kidney injury. Recovery started in the 2nd or 3rd wk. The

median duration of hospital stays in those who recovered was 10 d. Adverse outcomes and death are more common in the elderly and those with underlying co-morbidities (50-75% of fatal cases). Fatality rate in hospitalized adult patients ranged from 4 to 11%. The overall case fatality rate is estimated to range between 2 and 3%.

Bovine coronaviruses (BoCoVs) are known to infect several domestic and wild ruminants (126). BoCoV inflicts neonatal calf diarrhea in adult cattle, leading to bloody diarrhea (winter dysentery) and respiratory disease complex (shipping fever) in cattle of all age groups (126). BoCoV-like viruses have been noted in humans, suggesting its zoonotic potential as well (127). Feline enteric and feline infectious peritonitis (FIP) viruses are the two major feline CoVs (128), where feline CoVs can affect the gastrointestinal tract, abdominal cavity (peritonitis), respiratory tract, and central nervous system (128). Canines are also affected by CoVs that fall under different genera, namely, canine enteric coronavirus in Alphacoronavirus and canine respiratory coronavirus in Beta coronavirus, affecting the enteric and respiratory tract, respectively (129, 130). IBV, under Gamma coronavirus, causes diseases of respiratory, urinary, and reproductive systems, with substantial economic losses in chickens (131, 132). In small laboratory animals, mouse hepatitis virus, rat sialodacryoadenitis coronavirus, and guinea pig and rabbit coronaviruses are the major CoVs associated with disease manifestations like enteritis, hepatitis, and respiratory infections (10, 133).

this emerging virus will establish a niche in humans and coexist with us for a long time. Before clinically approved vaccines are widely available, there is no better way to protect us from SARS-CoV-2 than personal preventive behaviors such as social distancing and wearing masks, and public health measures, including active testing, case tracing and restrictions on social gatherings. Despite a flood of SARS-CoV-2 research published every week, current knowledge of this novel coronavirus is just the tip of the iceberg. The animal origin and cross-species infection route of SARS-CoV-2 are yet to be uncovered. The molecular mechanisms of SARS-CoV-2 infection pathogenesis and virus—host

The host spectrum of coronavirus increased when a novel Coronavirus, namely, SWI was recognized in the liver tissue of a captive beluga whale (*Delphinapterus leucas*) (138). In recent decades, several novel coronaviruses were identified from different animal species. Bats can harbor these viruses without manifesting any clinical disease but are persistently infected (30). They are the only mammals with the capacity for self-powered flight, which enables them to migrate long distances, unlike land mammals. Bats are distributed worldwide and also account for about a fifth of all mammalian species (6). This makes them the ideal reservoir host for many viral agents and also the source of novel coronaviruses that have yet to be identified. It has become a necessity to study the diversity of coronavirus in the bat population to prevent future outbreaks that could jeopardize livestock and public health. The repeated outbreaks caused by bat-origin coronaviruses calls for the development of efficient molecular surveillance strategies for studying Beta coronavirus among animals (12), especially in the *Rhinolophus* bat family (86).

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The virus can remain viable on surfaces for days in favorable atmospheric conditions but are destroyed in less than a day by common disinfectants like sodium hypochlorite, hydrogen peroxide, etc. Infection is acquired either by inhalation of these droplets or touching surfaces contaminated by them and then touching the nose, mouth, and eyes. The virus is also present in the stool and contamination of the water supply and subsequent transmission via aerosolization/feco-oral route is also hypothesized. As per current information, transplacental transmission from pregnant women to their fetus has not been described. However, neonatal disease due to post-natal transmission is described.