https://doi.org/10.47811/bhj.90

Emerging Infectious Disease: Coronavirus Disease of 2019 (COVID- 19): What we know and what remains to be known?

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In December 2019, cases of Pneumonia of unknown cause was reported in Wuhan City, Hubei Province, China caused by SARS-CoV-2 of Coronaviridae family[1].

The COVID-19 outbreak is the third documented spillover of an animal coronavirus to humans in only two decades that has resulted in a major epidemic syndrome that is potentially fatal[2]. Initially when the disease outbreak happened it was linked to the Huanan South China Seafood Market, a live animal or 'wet' market, suggesting a zoonotic origin of the virus[3].

The incubation period of COVID-19 ranges from 2 to 14 days and 97.5% develops symptoms in 11.5 days[4,5]. Studies have shown that people aged 60 years or older and people with underlying chronic diseases like chronic respiratory diseases, cardiovascular diseases, severe obesity, diabetes, renal diseases, liver disease have higher risk of getting infected with high fatality rates[6]. Transmission among human beings occur via close contact with infected person, through respiratory droplets or via fomites. Though airborne transmission is not reported, it is possible in the clinical settings during aerosol generating procedures[7]. The virus has been detected in blood, cerebrospinal fluid, urine, saliva, tears, and conjunctival secretions. Patients with diarrhea are more likely to have viral RNA in their stool[8]. Nosocomial transmission in healthcare workers and patients has been reported[9].

Studies suggest that some people can be contagious during the incubation period (Presymptomatic transmission)[10] and also can be asymptomatic carriers[11], and children play an important role in community spread[12]. Multiple superspreading events have been reported and super spreaders can pass the infection on to large numbers of contacts, including healthcare workers[13]. Regarding intrauterine infection some retrospective studies have shown that there is no evidence but vertical transmission could not be ruled out since virus specific antibodies were detected in neonates born to COVID -19 mothers[14].

A patient of COVID-19 manifests symptoms that is suggestive of a respiratory infection with a symptom severity ranging from a mild common cold-like illness, to a severe viral pneumonia leading to acute respiratory distress. Some patients also presented with gastrointestinal symptoms and the most recent being anosmia.

From the lessons learnt during outbreaks like Ebola, SARS, MERS, WHO accelerated its R& D blueprint for developments in diagnostics, treatments and vaccines[15].
Following diagnostic tests can be used in COVID-19 depending on the severity of illness[16].

1. Real-time reverse transcriptase Polymerase Chain Reaction
2. Chest X-ray
3. Computed Tomograph (CT) Chest
4. Serology
5. Lung ultrasound

Various treatments and vaccines are trialled in the treatment of COVID-19 but no treatments have been approved or shown to be safe and effective. However, there are several treatments being used off-label.[17]

Globally vaccine R & D has initiated development of vaccine candidates for COVI-19 which are in different phases of clinical trial and is expected to be available for emergency use or for similar protocol by early 2021[18]. According to WHO, there is no evidence of BCG vaccine being protective against COVID-19 but clinical trials are underway.

In conclusion, with this continuing pandemic, many things regarding the SARS-COV-2 infection still remains to be explored and confirmed including the reservoir and the intermediate host, symptoms, the possibility of airborne transmission, effects of weather, mother to child transmission, vaccines and treatment among many others.

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