



Haemophilus Influenza Coinfection in COVID-19 Patients

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ABOUT THE STUDY

Lower respiratory tract infection is one of the most prevalent clinical conditions, with bacterial infections accounting for the majority of cases. According to World Health Organization statistics from 2013, lower respiratory tract infection and chronic obstructive pulmonary disease are the third and fourth leading causes of death in the world, respectively. A new coronavirus was revealed to be the source of a massive and fast growing outbreak of respiratory disease, including potentially fatal pneumonia, in Wuhan, China, in late 2019 and early 2020. The virus was given the name SARS-CoV-2 because of its resemblance to SARS-CoV. The virus's sickness has been dubbed COVID-19 by the World Health Organization. SARS-CoV-2 is the eighth distinct coronavirus species capable of causing SARS. It belongs to the coronavirus cluster.

Pneumonia caused by other viruses or bacteria, such as *Streptococcus pneumoniae*, *Haemophilus influenzae*, Methicillin-Resistant *Staphylococcus aureus*, and Respiratory syncytial virus, should be considered when diagnosing and treating SARS-CoV-2. Seasonal and avian influenza, as well as other fever viral infections, should be considered in the differential diagnosis. Rapid antigen testing and repeated PCR nucleic acid detection should be performed to minimise blind or inappropriate antibiotic use.

Human-to-human transmission was rapidly established, both in clinical settings and in familial clusters, despite the fact that the earliest cases were ascribed to zoonotic transmission. Indeed, after crossing the species barrier, human-to-human transmission was promptly blamed for the virus's vast and rapid spread among individuals lacking protection; the sickness travelled from a

single focus site across the entire country of China in less than 30 days. The main modes of infection are respiratory droplets and close contact transmission.

Expectoration, headaches, hemoptysis, and diarrhoea occurred in a small number of patients. According to the current cases, the majority of patients have a decent prognosis, although a few are seriously ill. Fever and cough are common symptoms of viral infection, which often lead to lower respiratory tract disease with poor clinical outcomes linked with advanced age and underlying medical problems. Although nucleic acid testing of respiratory tract samples (e.g., throat swabs) is required to confirm infection, a clinical diagnosis can be made based on symptoms, exposures, and chest imaging. Because no specific effective antiviral medications have been developed, patients are usually given supportive care.

Nucleic acids from SARS-CoV-2 can be found in nasopharyngeal swabs, sputum, and other lower respiratory tract secretions, as well as blood and faeces. Sputum and lower respiratory tract secretions should be collected and sent for screening as soon as possible in tracheal intubation patients to maximise the positive rate of nucleic acid detection. Sputum samples were taken for this study. Many patients with SARS-CoV-2 infection were found to be infected with additional lower respiratory tract pathogens, according to the findings of this investigation. The most prevalent bacterial pathogen found was *Haemophilus influenzae*. Multiple coinfections were frequently found. The standard method of etiological diagnosis takes a long time and has a low positive rate, thus a fast and simple method is urgently needed in the field. Sputum multiplex PCR could become a useful diagnostic tool for bacterial respiratory infections in COVID-19 infected inpatients.

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