LETTER TO THE EDITOR

Pandemic COVID-19 and Development of Pneumonia

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Dear Editor,

Coronavirus disease-2019 (COVID-19) is caused by severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2). It belongs to a family of viruses that are highly contagious and pathogenic causing various viralsymptoms including fever, dry cough and lung infections. This virus is common in different animals worldwide and very few cases were reported to affect the humans in the past.[1] According to World Health Organization (WHO) this new novel Coronavirus mainly affects the lower respiratory tract in humans.[2]

In the beginning the patients infected with Wuhan Coronavirus induced pneumonia in China were linked to the visit to seafood market where live and dead animals were sold. However, further investigations revealed that some individuals contracted the infection even withoutany visit to the seafood market. These observations indicated a human to the human contagious spread of this virus.[3] It is transmitted from one person to other via close contact to the infected person, on exposure to coughing and sneezing. The aerosolspenetrates in human lungs through the nose or mouth.[4]

COVID-19 has spread in more than 209 countries including Pakistan. According to the literature available so far, more than fifty thousand mortalities have been recorded and about more than one million people have been affected worldwide and this number is rapidly increasing each day.[5]

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The exact mechanism of developing pneumonia in COVID-19 infected person is still controversial but according to the literature the COVID-19 virus particularly targets the organs that express angiotensin converting enzyme 2 (ACE2) including lungs, kidney, heart and gastrointestinal system. The viral infection has the ability to exaggerate the immune reaction in its host which as a whole is labeled as cytokine storm in the literature. The interlukin-6 produced by activated leukocytes is considered to be protagonist form which acts on the large number of cells and tissues of the person.[6]

The clinical spectrum of COVID-19 varies from person to person, either asymptomatic or pauci-symptomatic and severe respiratory failure at which intubation is needed. The overall period from the onset of infection, appearance of symptoms to death ranges between 2 to 10 days. This period may reach up to 2 weeks when patient is intubated.[6,7]

The severity of the disease is strongly correlated with the patient's age (>70 years) and presence of other co-morbidities including hypertension, diabetes mellitus, cardiovascular diseases and respiratory disorders. The risk of death in severe patients was higher especially in thosehaving cardiovascular disease and other pulmonary infections. In addition, different metabolic disorders may suppress the normal functioning of immune system by interrupting the normal function of lymphocytes and macrophages which may make the person more prone to disease.[7]

In order to gain knowledge regarding COVID-19 related pneumonia development, there is a dire need to study pathogenesis of this disease in detail

at every possible step, ranging from nasopharyngeal samples to autopsies. This requires a meticulous and ambitious approach to face the challenges with determination.

CONFLICT OF INTEREST

None to declare.

FINANCIAL DISCLOSURE

None to disclose.

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Dr. Qurat-ul-Ain Javaid (MBBS, M.Phil.) is an Assistant Professor of Pathology at Rashid Latif Medical College Lahore, Pakistan. She has keen interest in Microbiology and infectious diseases and has written this short manuscript on the topic since the outbreak has emerged.