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Letter to the Editor

COVID-19 and non-COVID-19 pneumonia: Alarming synergism for Pakistan's overwhelmed healthcare system

Dear Editor,

We have read with great interest, a recent article highlighting the impact of co-epidemics of COVID-19 and infectious diseases on Pakistan's overwhelmed healthcare system.¹ SARS-CoV-2 is causing mild illnesses to even severe pneumonia cases in patients having co-morbidities. According to the World Health Organization (WHO), by January 3, 2021, COVID-19 has been the cause of 79 million active cases and 1.7 million deaths worldwide. In Pakistan, conditions of COVID-19 are worryingly worsening; there was an alarming resurgence of more than 14 809 new cases recorded last week (67 new cases per 1 million), with a rise of about 45%. On January 4, 2021, about 0.46 million infected cases, and 9 thousand deaths were reported in Pakistan, as shown in Fig. 1(a).² Simultaneously, pneumonia, either caused by viruses or bacteria, is more prevalent in the winter and autumn season. The signs of pneumonia COVID-19 can be similar to other forms of viral pneumonia, as illustrated in Fig. 1(b). Pneumonia-related deaths are higher than any other child disease, killing more than 800 000 children under 05 years or about 2200 per day worldwide. Dreadfully, Pakistan has a high prevalence of pneumonia, as shown in Fig. 1(c). Published data showed that since 1990, pneumonia-related mortality in Pakistan is quite high. Pakistan's health system is facing a severe downturn and does not have adequate facilities for distinguishing between COVID-19 and non-COVID-19 pneumonia. Consequently, putting patients and healthcare workers at greater risk which could lead to an upsurge in mortality.

Although the RT-PCR has a high specificity for COVID-19, its sensitivity for COVID-19 is comparatively low. The research documented Computed Tomography (CT) scans' utility in the differential diagnosis of COVID-19 pneumonia and non-COVID-19 pneumonia. Besides CT's usefulness in detecting COVID-19 pneumonia, it is not suitable for COVID-19 screening because of its expense and high radiation exposure. On the other

hand, chest X-Ray imaging (CXR) is economical and is a widely used method for screening purposes. The hallmark characteristics of COVID-19 pneumonia include bilateral involvement abnormalities in the peripheral and lower zone of lungs, "ground-glass" presentation of the lungs and infrequent pleural effusion.³ The sensitivity to CXR for pulmonary disorders in contrast with chest CT is usually limited.

So far, it is not clear when the devastating effect of this virus is going to stop. However, clinical symptoms of the COVID-19 are close to influenza (e.g., fever, fatigue, cough, and sore throat), and the epidemic happens during a year when influenza respiratory infections, respiratory syncytial viruses, and other respiratory viruses are persistent. The detection of infected patients is very critical for clinics. SARS-Cov-2 infection's clinical symptoms range from asymptomatic carriage to atypical pneumonia, respiratory failure, hyper-inflammatory response, and acute respiratory distress syndrome (ARDS). Interestingly, CT findings of COVID-19 pneumonia have significant similarities with pneumonia caused by other viruses but distinct from bacterial origin pneumonia. Therefore, it is substantially hard to differentiate between COVID-19 and pneumonia caused by different viruses is of great importance. As a highly contiguous disease, the transmission of COVID-19 pneumonia related to the hospital has been suspected in 41% of patients. Additionally, a study confirmed that COVID-19 and non-COVID-19 pneumonia are prevalent in middle-aged individuals. A clinical study reported higher mortality from COVID-19 pneumonia in elderly patients underlying various chronic diseases. The estimated death time after the onset of COVID-19 pneumonia ranges from 15 to 20 days.⁴

Pakistan's government is taking serious actions to combat the overburden of disease and facilitate the public by providing designated hospitals, quarantine centers, and free PCR testing for COVID-19. However, as the fifth largest and low-middle-income region, Pakistan does not have much financial capital to overcome health practitioners'

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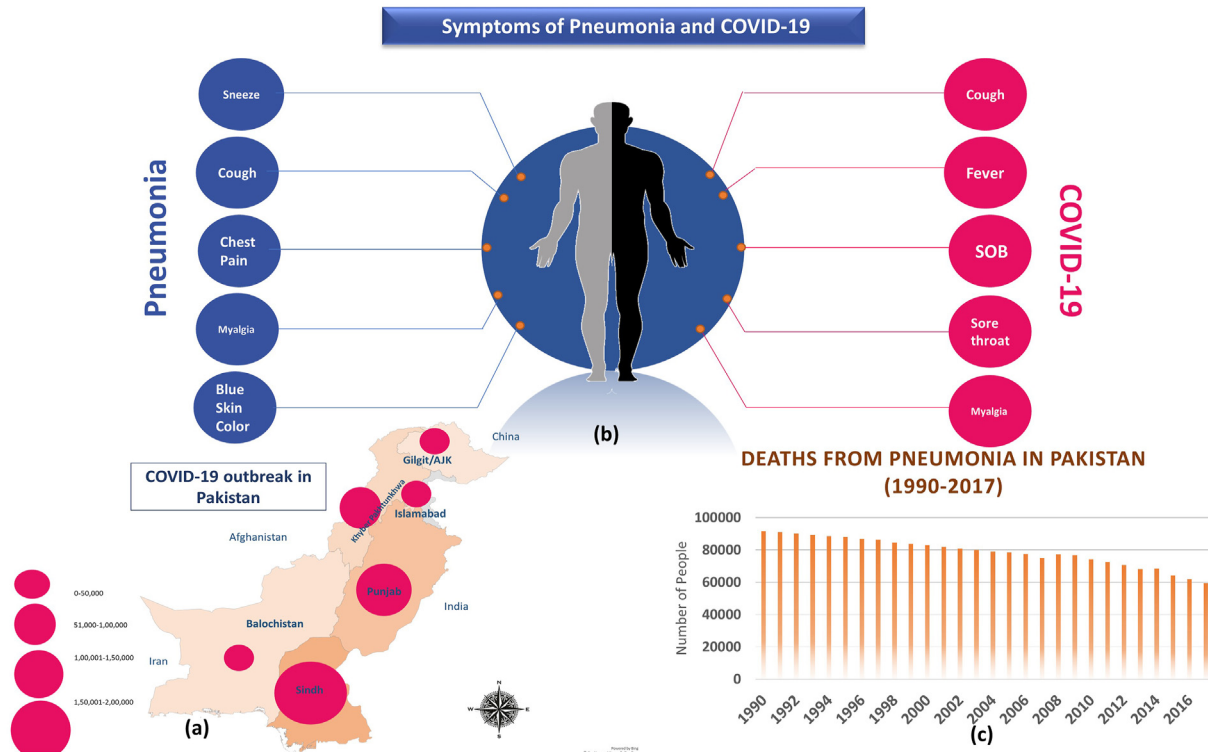


Figure 1 (a) Prevalence of COVID-19 in Pakistan, by date 3rd January 2020 (Data is retrieved from WHO) (b) Symptomatic similarities of both COVID-19 and non-COVID-19 pneumonia. (c) Prevalence of non-COVID-19 pneumonia in Pakistan from year 1990-to-2017 (Date is retrieved by Bernadeta Dadonaite, Max Roser, Ourworld in data).

continuing constraints, rising healthcare costs, and a shortage of medical facilities. There will be a risk of disease transmission from COVID-19 patients to non-COVID pneumonia patients and probably, from non-COVID pneumonia patients to the COVID-19 patients, which would inevitably lead to catastrophic conditions. The Pakistani health care regime, as a developing economy, is not strong enough to counter the synergistic assault of COVID-19 and other pneumonia. The Pakistani government must develop intensive health policies for proper segregation of COVID-19 and pneumonia patients to resolve the possible threats and synergistic effects of COVID-19 and non-COVID-19 pneumonia.

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Declaration of competing interest

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