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Letter to the Editor

COVID-19 and tuberculosis

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The symptoms and radiologic features of coronavirus disease 2019 (COVID-19) are similar to tuberculosis (TB). On March 11, 2020, the World Health Organization (WHO) declared this virus-caused disease to be a pandemic. The quarantine process, which entered our lives with the pandemic, hampered the diagnosis and treatment of some diseases, including TB.[1,2] The purpose of this article was to raise tuberculosis awareness and assess the global TB situation during the pandemic.

Despite significant progress in the struggle against tuberculosis, the disease remains the world's most lethal bacterial infection. Every year, approximately 10 million people die as a result of TB. With a decision taken during the pre-pandemic period, WHO aimed to reduce TB-related deaths by 90% and new TB cases by 80% by 2030.[2] The most serious issues in TB management, which is a major public health issue, particularly in developing countries, are inadequate diagnosis, inadequate treatment, non-adherence to treatment, and an increase in resistance cases in the community. Tuberculosis cases can present as pulmonary TB, extra-pulmonary TB, or both forms at the same time.[3] In the presence of symptoms such as cough, sputum, hemoptysis, chest pain, dyspnea, weakness, fatigue, fever, and night sweats that last for two weeks or more, TB should be considered in the differential diagnosis.[3,4] Although both TB and COVID-19 are respiratory diseases, TB symptoms last longer. Complaints such as cough, sputum, fatigue, weakness, and shortness of breath are the reason for application in both diseases. Furthermore, both diseases have asymptomatic patient groups.[5,6]

Although the upper lobe apical, apical segments of the posterior and lower lobes are the most common sites of involvement in pulmonary TB, lower lobe involvements, pleural effusion, miliary involvement, mediastinal lymphadenopathies, mass-like lesions, and pneumothorax can also be seen. Atypical involvements are most common in immunosuppressed patients. Chest radiograph findings may suggest TB, but these lesions are known to occur in a variety of other lung diseases. While chest radiographs have a sensitivity of 70-80% in diagnosing active TB, their specificity is 60-70%, and there may be differences in interpretation among clinicians.[7,8] Early diagnosis of TB is critical for effective treatment. Chest radiography is still used to diagnose parenchymal disease in primary pulmonary TB, but computed tomography (CT) is more sensitive in detecting lymphadenopathy. Computed tomography is the preferred method for detecting early bronchogenic spread in post-primary pulmonary TB. In determining whether an infection is active or not, CT is more sensitive than radiography. Despite the importance of radiology, it is not appropriate to diagnose TB solely on the basis of radiology without clinical and bacteriological findings. The diagnosis should be confirmed by histopathological examination of the biopsy obtained through bacteriology or bronchoscopy.[7-9]

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Ground-glass opacities and consolidations, mostly bilateral, peripheral, and sub-regional distributions, are common chest radiograph findings of COVID-19 pneumonia. Lymphadenopathy or pleural effusion is uncommon. However, because the sensitivity of a plain chest radiograph depends on the time of imaging and the severity of lung involvement, it cannot rule out the diagnosis of COVID-19. Typical findings include bilateral distribution of ground-glass opacities in the peripheral and posterior lungs. The size and degree of involvement of the ground-glass opacities may increase as the disease progresses, and more consolidations may occur. Atypical COVID-19 findings include pleural effusion, multiple small pulmonary nodules, and mediastinal lymphadenopathies.[10]

Abnormalities usually peak 14 days after the disease's onset, with some patients developing bilateral and diffuse infiltration in all segments of the lungs, resulting in "white lung". Following that, pulmonary inflammation heals with the gradual replacement of cellular components by scar tissues, which are depicted as fibrous strips.[11] When compared radiologically, TB and COVID-19 have many similarities.[5,6]

In terms of radiology, chest radiography is completely natural in both diseases, but opacities can be detected in both. When CT images taken for further examination from both diseases are compared, images in the form of ground-glass areas, consolidated areas, and nodular involvement with irregular borders are seen. The treatment for these two diseases is completely different, despite the fact that they have many clinical and radiological similarities.[5,6,12] As a result, in the fight against the COVID-19 pandemic, it is critical to remember to suspect and manage TB, as it is still one of the leading infectious causes of death worldwide.[6]

Global situation assessment

The focus of healthcare personnel and the healthcare system on the COVID-19 outbreak has hampered the early diagnosis and treatment of TB. When compared to 2019 data, it is reported that China has decreased by 20% and India has decreased by 75%.[13] According to a study conducted in Taiwan, the number of TB patients diagnosed and treated monthly between 2015 and 2020 has decreased when compared to the same period of five years.[14] According to Cilloni et al.[15] in their mathematical modeling study, a three-month global quarantine and a 10-month restriction will result in 6.3 million new cases and 1.4 million deaths from TB between 2020 and 2025. The number of cases predicted in 2021 is expected to rise to that of 2013-2016, and the fight against TB will be disrupted for at least 5-8 years while the pandemic is contained. Furthermore, it is foreseen that there will be 40,685 additional deaths in India, 1,157 in Kenya, and 137 in Ukraine each month until they return to pre-pandemic services in the fight against TB.[15]

According to the WHO's 2020 TB report, while social distancing rules reduce TB transmission, they increase the risk of untreated cases being transmitted to household members. Consequences such as economic contraction and malnutrition caused by the quarantine, particularly in low-income populations, exacerbated the situation in the fight against the TB epidemic. According to monthly TB case records, there has been a significant reduction in the number of cases in endemic countries (such as India, Philippines, Indonesia, South Africa, Thailand, Mozambique, Vietnam).[16]

In conclusion, COVID-19 has been the focus of society and healthcare professionals' attention as a result of the global outbreak. Many people avoid going to hospitals even if they have symptoms because they are afraid of contracting the coronavirus. Even if it is the first application, there are insufficient hospital admissions to conduct adequate tests until a TB diagnosis is made. With the implementation of quarantines, the number of patients with a new TB diagnosis in 2020 has decreased rapidly and significantly in high TB burden countries. Although the mask and social distance measures used to protect us from COVID-19 also protect us from TB, there is no effective protection against contamination by household members. According to WHO estimates, the current outbreak will set us back 5-8 years in the fight against TB. We would like to emphasize the importance of screening for TB in suspected patients in our country, which is endemic for the disease.

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