Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

COVID-19 and TB co-infection - 'Finishing touch" in perfect recipe to 'severity' or 'death'

Correspondence

Co-infections are increasingly being recognised in respiratory tract infections (RTIs) with the advent of highly sensitive techniques for micro-organism detection and identification (e.g. MALDI-TOF, Multiplex PCR). Co-infections involving the respiratory tract pose clinical dilemmas and diagnostic and therapeutic challenges.

We read with great interest, the systematic review by Louise Lansbury and colleagues, in which they have highlighted an important aspect of bacterial and viral co-infections in COVID-19 and antimicrobial prescription strategy.[1] Similar concern has been raised by Michael J Cox et al. through a correspondence.[2] However, one clinical entity of global interest whose importance has reduced during COVID-19 pandemic is Tuberculosis. We would like to present an interesting case of SARS CoV-2 and TB coinfection, and further highlight concerns in TB and SARS CoV-2 coinfection. A 38-year-male, no significant medical history; admitted with complaints of low-grade fever, evening rise, cough with expectoration and shortness of breath of one-and-half months' duration. There was a history of attending a large congregation during this pandemic. On admission, his vitals were - GCS-15, BP-96/50 mmHg, PR-92.min, low SpO2–84% (room air), respiratory rate-28/min. Chest X ray revealed diffuse infiltrates bilaterally; laboratory abnormalities included anaemia, normal TLC (neutrophilic), and mild transaminitis. Considering a COVID suspect, fulfilling criteria for SARI (severe acute respiratory illness), his nasopharyngeal and oropharyngeal swab was sent for SARS CoV-2 testing via reverse transcriptase polymerase chain reaction (RT-PCR), which came positive. He was managed with i.v antibiotics, oxygen supplementation along with hydroxychloroquine sulphate (HCQS) (Day 1-400 mg BD, Day 2–5–200 mg BD). However, despite i.v antibiotics and HCQS, he continued to remain symptomatic. Based on non-resolving symptoms of prolonged duration, he was further evaluated for other causes, including TB; sputum samples were sent for appropriate investigations. He was started on anti-tubercular therapy empirically, awaiting test results. However, he deteriorated clinically with increasing dyspnoea and worsening of respiratory parameters (decreasing SpO2, respiratory rate), requiring mechanical ventilation. Despite all measures, the patient rapidly deteriorated and succumbed to the illness. The diagnosis of TB was confirmed post mortem by positive CBNAAT results.

Coinfection with TB and SARS CoV-2 is of particular concern due to several reasons. Firstly, diagnosis of TB is likely to be missed due to non-specific clinical features in both (TB & COVID-19) and lack of radiological findings specific to TB. Secondly, this disease itself or use of immunomodulators in moderate-severe COVID-19 may lead to reactivation of latent TB in high endemic areas like India.[3,4] Thirdly, pre-existing TB disease and underlying lung condition will affect the clinical categorisation (for severity) of COVID-19. Fourth, co-existing active TB disease may predispose to severe illness.[5,6] Lastly, there is possibility of drug-drug interactions (e.g. Rifampicin and Lopinavir/ritonavir) as well as additive hepatotoxicity (remdisivir) due to simultaneous use of anti-tubercular drugs and available COVID-19 therapeutic options.[7]

To conclude, co-infections with TB must always be suspected in addition to COVID-19 in current scenario in patients with RTI with non-specific clinical features and unexplained or prolonged clinical course and utmost consideration should be given to all above concerns implicated.

Declaration of Competing Interest

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Author contribution

RK – conceived the idea. RK, BB, VM were involved in the preparation of manuscript. VM, MS, NW were involved in the editing and proof reading.

All authors are actively involved in management of COVID cases in their institute.

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