Review Article

Tuberculosis and COVID-19

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Tuberculosis is present in India as older epidemic before the occurrence of covid-19. World Health Organization has declared TB as global health emergency in 1993. As per 2019 census 2.64 million people affected by TB and 450000 people died due to TB. Every day more than 1000 TB deaths occur in country. India is the most affected country by TB across the world which accounts for a quarter of the 10 million global TB cases and 1.4 million TB deaths each year.[1],[4]

Recently in 2019 World health organization renamed novel corona virus to severe respiratory syndrome corona virus 2 (SARS-CoV-2), which was first seen in December 2019 as unexplained pneumonia from Wuhan city of china. On 11 March 2020 covid-19 is declared as pandemic by WHO [.2], [8]

These both are infectious diseases primarily affecting the lungs. TB and covid-19 diseases have some similar symptoms i.e. cough, fever and difficulty in breathing. Tuberculosis however has a slower onset of disease and longer incubation period. People those had tuberculosis and also infected with COVID-19 infection, it is anticipated that such kind of patients may have poor prognosis, especially if TB treatment is interrupted. It is needed for TB patients to protect themselves from COVID-19 by using precautionary measures and also continue their DOTS treatment regularly.[3],[7]

Tuberculosis is caused by bacteria Mycobacterium tuberculosis while causative agent for COVID-19 is a virus SARS-CoV-2. Mode of transmission in TB mainly through droplet nuclei aerosols of a TB patient, who are infectious since longer duration without effective treatment.[4],[5]

SARS-CoV-2 primarily transmits through droplets and fomites but on recent evidences may be through aerosols. SARS-CoV-2 infected person can transmit the infection to additional 2–3 persons, but a TB infected person can infect 1–4 persons. Risk factors are common in both diseases such as old age, DM, kidney disease, smoking, chronic respiratory disorders, low immunity etc. Evidence is lacking whether active or previously treated TB and HIV can enhance the severity and complications of COVID-19 or not.[6],[8]

Still some relaxing part is there in treatment aspect of TB as there are various treatment options available including dealing of MDR cases, critically ill patients; SOP is formed to provide medicine as per the condition of the patients. Nish Chaya app is already started for tuberculosis patient. BCG vaccination is a part of national immunization schedule helps in primary level prevention of TB, but at present there are no specific evidence-based treatment choices available for covid-19 and various researches are going-on globally to develop vaccines for SARS-CoV-2 and few vaccines are even approved for emergency trial basis.[4]

Diagnostic test for pulmonary Tuberculosis includes sputum or BAL (bronchoalveolar lavage) with automated CBNAAT (cartridge-based nucleic acid amplification test), chest x-ray, Mantoux test. COVID-19 also be detected rapidly with reverse transcription–polymerase chain reaction or CBNAAT either from a nasal and oral pharyngeal swab or a sputum/BAL test if required.[7],[8]

Both diseases need contact tracing and infection control and preventive measures that include handwashing, Social distancing, covering mouth while coughing, hygienic habits, isolation, prolonged quarantine, and preventing transmission of droplet nuclei by using barriers like masks.[5],[6],[7] people are aware of importance of hand washing for prevention of covid-19 but need to create awareness in them about how to use mask, sanitizer use, govt helpline number etc.[6] these Both diseases are related to social stigma and having huge economic impact worldwide, but the burden of disease is chronic for TB and acute in contrast for COVID-19.

It is quite challenging for almost all the countries; this situation will be alarming for high-burden countries like India. Various issues that need to be encountered are:

- To ensure smooth functioning of general health services at various levels leading to disruption of routine TB care, interruption of DOTS (Directly observed treatment, short course) treatment due to mobility restrictions.
- Diagnosis of COVID-19 is getting priority rather than TB by laboratories causing diagnostic delay.
- Reassign staffs of National Tuberculosis Elimination Program (NTEP) to handle COVID-19 overburden.
- Due to decreased manufacturing capacity, deficiency of drugs stock and also disturbance in transportation facilities.
- Utilization of TB hospitals for COVID-19 patients.
- Significant burden of undiagnosed TB patients, confection with HIV, priority to treat DR-TB patients with regimens containing newer drugs, and low health expenditure.
- Available resources might not be sufficient in this pandemic situation due to existence of several difficulties such as limited health institutions, availability of beds, ventilators and other health facilities in hospital.[6],[7]

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