



Early View

Correspondence

## **The (in)significance of TB and COVID-19 co-infection**

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## The (in)significance of TB and COVID-19 co-infection

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We read with great interest the research letter by Tadolini et al in which they have published the first cohort of 49 cases of TB and COVID-19 co-infection. However, few issues regarding the letter need to be addressed.

The authors categorized the patients of TB and COVID-19 co-infection into 3 groups based on timing of their diagnosis.<sup>1</sup> However, in view of the difference in the natural history of TB (chronic course) and COVID-19 (acute), categorizing 14 patients as having COVID-19 prior to TB (median time interval of 4 days between the two diagnosis) and 9 as diagnosed simultaneously (within the same week) seems inappropriate. Since TB has an insidious onset, it is obvious that TB was present before COVID-19 infection in both the subgroups, although the diagnosis was made at different times. In fact, it may be right to say that all the 3 subgroups actually constitute a single group of old/active TB patients who developed COVID-19 infection. COVID-19 has probably just unmasked some of the subtle active TB cases which were responsible for hidden transmission in the general population.<sup>2</sup> Superimposed COVID-19 has brought them to the hospital to get a timely diagnosis.

Considering the high worldwide prevalence of tuberculosis and increasing burden of COVID-19, the co-infection seems more likely to be a co-incidental occurrence rather than a causal association. It is likely that patients with active TB will have more time to get exposed to COVID-19 infection due to chronic course of TB. The hypothesis is also supported by a higher percentage of MDR TB patients in the present study as these patients are on a prolonged treatment and harbor the TB disease for a longer period of time. However, a well designed prospective cohort study is required to prove any causal association between the two diseases as also concluded by the authors.

Apart from assessing association, the other main concern about this co-infection is the mortality associated with it. The present study showed a mortality of 12.3% in the patients with dual infection which is much higher than isolated Covid-19 disease.<sup>3</sup> However, this apparent higher mortality can't be attributed to the dual infection from this cohort as majority of fatal patients had proven risk factors of mortality (> 60 years age and  $\geq 1$  co-morbidities) that might have deviated the figures.

Irrespective of the probable temporal association between COVID-19 and TB, both the infectious diseases may have synergistic impact on social and economic impact worldwide. This is because both the diseases are expected to spread in overcrowded areas with poor and undernourished population.<sup>4</sup> High TB burden countries have a huge number of patients with post TB lung sequele and the outcome of COVID-19 in such patients is unknown so far. It is important to understand from this analysis that in the fight against COVID-19 pandemic, we should not forget to suspect and manage TB appropriately which is still one of the leading infectious causes of death worldwide.

## References:

1. Tadolini M, Codecasa LR, Garcia-Garcia Je-Mia et al. Active tuberculosis, sequelae and COVID-19 co-infection: first cohort of 49 cases. *Eur Respir J* 2020; in press(<http://doi.org/10.1183/13993003.01398-2020>).
2. Saunders MJ, Evans CA. COVID-19, tuberculosis and poverty: preventing a perfect storm. *Eur Respir J* 2020; in press(<https://doi.org/10.1183/13993003.01348-2020>).
3. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX. Clinical characteristics of Coronavirus disease 2019 in China. *N Engl J Med* 2020;382:1708-1720.
4. Wingfield T, Tovar MA, Datta S, Saunders MJ, Evans CA. Addressing social determinants to end tuberculosis. *Lancet* 2018;391:1129-32.