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When attacked by a new enemy, do not forget the old ones. A tale of 2 diseases: tuberculosis and COVID-19

Dear Editor

COVID-19 (COrona VIrus Diagnosed in 2019) is the most important health crisis of the present generation. Tuberculosis (TB) was overtaken by COVID-19 on April 1st, 2020 as the leading cause of death per day by an infectious disease. India is home to more than a quarter of the world's TB population and is presently ranked fourth in the number of cases of COVID-19 after the United States, Brazil, and Russia. The regions with the largest tuberculosis burden are also the areas most affected by the COVID-19 pandemic [1].

COVID-19 and TB have both overloaded the health system and both need a quick reliable diagnosis and a robust treatment plan due to the fact that both have a high fatality rate. Additionally, they have social stigmas attached to them upon diagnosis or suspicion of diagnosis and need increased public awareness to mitigate this. Transmission for both of these diseases is via droplets. One COVID-19 infected patient can infect 2.5 people in 5 days (i.e. R0 = 5), but diligent isolation can decrease this rate to as low as 1.05. Meanwhile, one TB infected patient can infect 10–15 people per year [1]. A delay in diagnosis of both can prove to be disastrous. Untreated, TB is a slow progressive disease which is unlike COVID-19. However, a delay in diagnosis and/or treatment non-compliance adds to the morbidity and mortality of these which is further complicated by the development of drug resistance. An important difference between the two is that, unlike tuberculosis, COVID-19 has gained much needed attention, has strong health surveillance systems which monitor and track the epidemic alongside national policies that were implemented in order to contain the epidemic.

Both these diseases have the ability to affect each other's pathogenesis as both are implicated in severely disturbing the hosts innate immune response. Co-infection with COVID-19 and tuberculosis has also been reported recently [2]. SARS-COV-2 infection can happen simultaneously, precede, or follow a tuberculosis diagnosis [3]. Tuberculosis has also been implicated to increase the vulnerability to this new coronavirus infection as well as its severity [4]. As the clinical manifestations are similar, the current care of patients with TB has been severely affected amidst the current pandemic. Strong administrative commitment with good political support was needed immediately and it was taken up by Indian government to curtail the pandemic to some extent. Measures taken included interstate coordination, awareness via social media, social isolation, tracking down suspected cases, a countrywide lockdown, and timely mobilization of essential goods. Unfortunately, these measures have severely hampered the ongoing tuberculosis care which was already suffering. The most significant issues include diagnosis and management of new cases, continuance of treatment of already diagnosed (particularly drug-resistant cases) due

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to the nation-wide lockdown, lack of timely physician access, transportation of drugs, nutritional and mental health support, and clinical care for comorbidities like HIV and cancer. These can lead to not only a worsening of the active tuberculosis burden, but also activation of latent tuberculosis cases. Transmission of tuberculosis among household members is also affected due to less exposure to tuberculosis preventative treatment because of limited health care access.

Apart from diagnosis and treatment, another important development regarding tuberculosis that occurred as result of this pandemic is acute mass migration, especially migrant labourer, due to the nationwide lockdown and subsequent loss of jobs. Migrants carry with them infections and pathogens which is presently proving to be a new challenge in the containment of the COVID-19 virus, and will result in the same challenge in the future for tuberculosis [5]. The migration phenomenon coupled with worsening socio-economic standards make them vulnerable for tuberculosis infection in the future [6]. A newly issued statement by the WHO regarding the anticipation of a secondary tuberculosis emergency in the near future may not be wrong and they stress the importance of making sure that TB services continue uninterrupted during the COVID-19 pandemic [7]. It should be remembered that diluted attention to existing TB management services due to the diversion of resources towards this new pandemic can result in an increase in drug-resistant cases and the eventual crumbling of the health care system.

Fighting tuberculosis amidst the COVID-19 pandemic needs interventions at multiple levels. Socio-economic support in the form of monetary funds and food parcels, especially for those without jobs, will help as poverty is known to drive tuberculosis rates globally. Infection control measures which are being propagated for COVID-19 can provide a much needed boost for preventing tuberculosis spread as well and can result in hindering practices like spitting, tobacco chewing, etc. Digital technology used to improve infection control measures and offer psychological support may also help. The surveillance and testing of high risk patients, especially members of the same household, has also improved by quantifying risk using simple tools for risk stratification [8]. Non-governmental organizations (NGO) offering more access to laboratory and health care workers with proper protection may help. Integration of COVID-19 and tuberculosis services is paramount now. Tuberculosis survivors and those having active tuberculosis should be prioritized for COVID-19 testing as they are especially vulnerable for the SARS-CoV-2 infection due to chronic lung damage and decreased cell-mediated immunity. The risk of progression from latent tuberculosis infection to active disease may increase due to COVID-19. Hence, COVID-19 testing should be used as an opportunity to detect tuberculosis latent infections in certain defined vulnerable groups. Further, having a low threshold for computed tomography (CT) chest and tubercle bacilli testing for COVID-19 patients may help in diagnosing subclinical chronic active tuberculosis patients [9]. An integrated testing system for both diseases with further decentralisation of tuberculosis testing along with drug sensitivity might be a pertinent solution. Continuing the already strengthened BCG vaccination program in the country will help as it has been shown that COVID-19 related mortality is strongly associated with BCG vaccination national programs [10].

Conclusion

Tubeculosis has long been a cause for significant morbidity and mortality in some countries. Emerging new diseases, such as COVID-19, should not let loosen our grip on it. Infection control measures and cough etiquettes propagated amidst this pandemic can prove to be a turning point in controlling the spread of TB. An integrated health care approach is in utmost need in order to tackle the menace of tuberculosis during this COVID-19 acute pandemic.

Conflict of interest

None declared.

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