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.

Developing health policies in patients presenting with SARS-CoV-2: consider tuberculosis

The global pandemic of COVID-19 has led to a prominent public health response, with many countries introducing highly proactive measures for screening and identifying severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 has gained the dubious honour as the single greatest infectious cause of global mortality in 2020. Active COVID-19 disease encompasses cough, fever, fatigue, and shortness of breath among other signs and symptoms.[1,2] Risk factors for severe COVID-19 disease include diabetes, chronic obstructive pulmonary disease, immune suppression, and age. Some select population demographics (people who are Black, Hispanic, or a member of another ethnic minority group), in association with overcrowded housing and homelessness, are also at risk of severe disease and mortality.[3]

These features occur equally in patients presenting with tuberculosis,[4] and patients with tuberculosis can also present with acute community-acquired pneumonia.[5] Before COVID-19, tuberculosis was associated with the highest burden of global mortality caused by an infectious disease;[4] however, the redirection of resources towards curtailing the pandemic have resulted in legitimate fears of tuberculosis control programmes being neglected.[6]

An early analysis of 49 patients presenting with the two diseases showed that 53·0% of the patients were diagnosed with tuberculosis before a COVID-19 diagnosis, 28·5% of patients were initially diagnosed with COVID-19, and 18·3% had both diseases diagnosed within the same week.[7] COVID-19 might have precipitated the diagnosis of pre-existing and undiagnosed tuberculosis; given its typically chronic course, tuberculosis was most likely to have been acquired before the patients were infected with SARS-CoV-2. Preliminary findings from a global study that is ongoing appear to confirm this assumption (Migliori GB, personal communication). SARS-CoV-2 might additionally negatively affect T-cell-mediated immunity, causing lymphopenia, particularly in those with a severe form of the disease,[8] which could reactivate latent tuberculosis or render patients with COVID-19 more susceptible to acquiring a tuberculosis infection.

Any symptomatic patient presenting with presumptive COVID-19 from a population at a high risk for tuberculosis, or from a country in which tuberculosis is highly endemic,[4] should have both diseases considered when it comes to submitting specimens for diagnosis, because of the potential reactivation of latent tuberculosis caused by the presence of SARS-CoV-2, or the greater frequency of tuberculosis presenting as community-acquired pneumonia in those populations. It should be a *sine qua non* that both tests be requested at the time of consultation, particularly if there are concomitant symptoms and signs pointing to tuberculosis (appendix). Similarly, any patient presenting with a cough, fever, and presumptive COVID-19 in a country that is highly endemic for HIV should be screened for both tuberculosis and HIV, if the patient's current status for tuberculosis and HIV is unknown, as well as following appropriate pre-test and post-test counselling for HIV.

In countries where tuberculosis is not highly endemic, if the history and presentation of the patient are suggestive of tuberculosis, appropriate diagnostic tests should be done. This procedure is particularly true of patients at a high risk of tuberculosis, who might be at risk of severe disease, including patients with previous lung damage due to tuberculosis, such as chronic obstructive pulmonary disease.[4] Specifically, WHO states: "There is thus a stronger case for concurrent testing for both conditions in [these individuals] even if the clinical picture is atypical."[9]

A confirmatory diagnosis of COVID-19 is dependent on the isolation and amplification of viral RNA.[10] Various automated systems have been developed, targeting specific areas of the viral genome, some of which are pre-existing platforms for tuberculosis or HIV.[10] Current WHO recommendations for tuberculosis diagnostics have standardised the Cepheid Xpert platform using MTB/RIF Ultra tests.[4] Given the overlap in the diagnostic platforms available and that sputum specimens might be used for COVID-19 diagnosis in severe disease,[10] and although it is highly advantageous that these platforms are multipurpose, there is real concern that testing for either tuberculosis or for COVID-19 might be done at

For **updates on COVID-19 deaths** see https://covid19.who.int/

See **Online** for appendix

the cost of the other. Resources should be mobilised to ensure that there is adequate testing capacity for both diseases.[9]

Irrespective of the final diagnosis, the appropriate steps for contact tracing will need to be undertaken following national and WHO guidelines, ensuring that those responsible for contact tracing have full and appropriate personal protective equipment provided.[9]

Infectious disease management strategies, including diagnosis, treatment, follow-up, and containment, have been enabled by the COVID-19 pandemic. This newly acquired ability to synthesise and simultaneously implement scientific knowledge should continue in the future. Governments should retain processes permitting the inclusion of new evidence rapidly into policy and practice as they emerge. A clear policy integrating diagnostics and care for both diseases will ensure that tuberculosis programmes are not disrupted in COVID-19 control efforts, but rather enhance tuberculosis diagnosis and control.

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