NTM Pulmonary Infection: Differential Diagnosis of MDR TB Pulmonary Infection

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SIR,

There is continued growth in the number and prevalence of mycobacterium species other than the Mycobacterium tuberculosis complex, resulting in disease similar to human tuberculosis. 1 Non-tuberculosis mycobacterium (NTM), is another mycobacterium that can cause pulmonary disease resembling pulmonary tuberculosis, lymphadenitis, skin lesions and sometimes disseminated disease. Localized chronic pulmonary disease is the most common clinical manifestation of NTM. 2–4

There are different guidelines for the diagnosis and treatment of disease caused by M. tuberculosis and non-tuberculosis Mycobacterium and hence the need to differentiate them.

A 40-year-old, immuno-competent, male, patient was found to be sputum Acid Fast Bacilli (AFB) positive on microscopy and was advised first line Anti-Tubercular Treatment (ATT) with effect from September 2012 from the peripheral health institution. He completed first line ATT course of 8 months in May 2013. At the end of 8 months of regular treatment, patient’s sputum sample was still found to be positive for AFB on microscopy in the same health institution. He was suspected to be a case of Multi Drug Resistance (MDR) i.e. treatment failure to first-line ATT and referred to Drug Resistance Tuberculosis Treatment Center (DRTB Center) and Intermediate Reference Laboratory (IRL) Dharmpur for drug susceptibility testing (DST) and further management. At Dharmpur DRTB center, his sputum smear was found to be AFB positive on microscopy and the sputum sample was further subjected to Line Probe Assay (LPA) i.e. molecular test, but the LPA results were negative (neither was Mycobacterium tuberculosis complex detected nor were the bacilli resistant to Rifampicin / INH i.e. first line ATT). Therefore this decontaminated sputum sample was inoculated on LJ drug free media as well as on LJ-PNB media (para nitro benzoic acid). The growth was (3+) positive on both (LJ drug free and LJ-PNB) media. All these tests were suggestive of the presence of non tubercular mycobacterium, further confirmed by negative MPT 64 Antigen (Ag) test, which is a rapid test for differentiating between MTBC and NTM (Positive MPT 64 Ag test is confirmation of MTBC). During the same period, sputum sample was confirmed for NTM from NABL accredited laboratory in Delhi.

NTM was not widely recognized as a human pathogen until the1950s, when several large series of patients with NTM lung disease were reported. Usually this infection occurs in patients with pre-existing lung disease such as bronchiectasis, cystic fibrosis or healed cavities from previous treated TB patients, especially in those with reduced immunity. 5–7

The clinical presentation of the pulmonary disease due to NTM is just like pulmonary tuberculosis, causing diagnostic errors. In the absence of clinical and radiological features suggestive of pulmonary tuberculosis, isolation of the NTM in sputum culture, is the gold standard for the diagnosis of NTM lung disease.

In the community, infection due to NTM should be suspected especially, when initial complete course of first line anti-tubercular treatment has not shown the desired response. Hence, before starting treatment for multi drug resistant TB with the second line ATT, in AFB sputum positive cases, MTBC should be confirmed and at the same time NTM infection should be ruled out either by conventional or new rapid available techniques. Thus physicians should consider NTM Pulmonary infection in the differential diagnosis of MDR TB Pulmonary infection, because treatment guidelines for both of these diseases are different.

References


