

High-resolution computed tomography in *Mycobacterium avium* complex disease: one step forward, two steps back

To the Editors:

We read with interest the article by KUROISHI *et al.* [1], in which the group pleasantly documented the prognostic implications of high-resolution computed tomography (HRCT) findings in *Mycobacterium avium* complex (MAC) disease. KUROISHI *et al.* [1], found that the presence of atelectasis, cavities, pleural thickening or bronchiectasis on a computed tomography (CT) scan indicated poor prognosis and concluded that CT findings are good predictors of the response to treatment in MAC disease patients. However, there are a few practical issues regarding the topic that need to be addressed.

Although HRCT requires less radiation, a chest CT scan is associated with radiation exposure of 8 mSv, equivalent to a radiation dose of 400 chest radiographs [2]. Exposing already immunocompromised patients of nontuberculous mycobacterial (NTM) infection to high dose radiation to predict the treatment outcome does not sound justified. Moreover, it is also associated with serious health hazards, notably an increased risk of cancer [3]. Thus, the risk–benefit ratio in such cases needs to be assessed. It also needs to be emphasised that the practice of using CT scans for such indications may inadvertently increase the irrational use of CT scans.

The radiological presentation of pulmonary infection by NTM is nonspecific and overlaps considerably with pulmonary tuberculosis [4]. Moreover, NTM disease has a predilection to occur in architecturally distorted lungs of old, treated, pulmonary tuberculosis patients. Therefore, judging the prognosis on the basis of CT findings alone may not present a true picture. Moreover, the cost of performing a CT scan is also of great concern, especially in developing countries such as India, where the burden of infection is substantial and the cost of a CT scan is beyond the reach of many people.

Finally, the total duration of treatment (minimum 12 months) mentioned in the study by KUROISHI *et al.* [1], is not in accordance with the American Thoracic Society guidelines, which recommends that treatment should continue for 1 yr of consecutively negative sputum cultures [5]. This delivers the wrong message to the readers and raises questions on the validity of the study's findings, as the authors have taken consecutive negative sputum cultures over a period of 3 months (not the recommended 12 months) as the gold standard for the parameter concerning the treatment outcome for comparison.

We feel that the treatment outcome in cases of nontuberculous mycobacterial infection should be predicted by comprehensively evaluating the severity of clinical features at initial presentation, presence of comorbidities, sputum smear grading of acid fast bacilli and radiological findings. High-resolution

computed tomography should only be performed in selected cases, where there is a difficulty in diagnosing the disease or the response to treatment is unsatisfactory.

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STATEMENT OF INTEREST

None declared.

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From the authors:

We would like to thank D. Aggarwal and P.R. Mohapatra for their interest in our article [1]. In their letter, D. Aggarwal and P.R. Mohapatra suggest that the risk/benefit ratio in nontuberculous mycobacteria (NTM) patients needs to be assessed, since high-dose radiation is associated with serious health hazards. In addition, the cost of performing a computed tomography (CT) scan is also of great concern. We agree that the indication of CT for NTM patients needs to be assessed. However, the usefulness of CT for the diagnosis of *Mycobacterium avium* complex disease is obvious in many previous reports [2–4]. Although we explained the risk of radiation hazards to the patients, most of them agreed to have a CT examination. They also suggest that in previously treated pulmonary tuberculosis patients, judging the prognosis solely on the basis of CT findings may not present a true picture. We