

Poster presentation

## Characteristics distinguishing disseminated *Mycobacterium tuberculosis* (MTB) and non-tuberculous mycobacterial (NTM) infection in HIV patients

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### Purpose of the study

The characteristics that distinguish disseminated MTB and NTM infection in patients with advanced HIV disease remain poorly studied. We aim to describe clinical, laboratory and radiological features of MTB and NTM and identify discriminatory findings.

### Methods

We conducted a retrospective case note review of all patients with culture-proven disseminated mycobacterial disease at a UK centre from 2005–2007. Patients with infection in  $\geq 2$  non-contiguous sites, or positive blood or bone marrow cultures, were included and stratified by causative pathogen. Categorical data were analysed by Fisher's exact test and non-categorical data by rank sum test.

### Summary of results

Of the 64 patients with confirmed mycobacterial infection, 31 had disseminated disease (MTB:21, NTM:10 [nine due to *M. avium* Complex]). Of these, 81% were black African, 45% male, and median age was 34 years. Patients with NTM had lower CD4 T-cell counts, more prior or concurrent AIDS-defining illnesses, and were more frequently taking HAART at the time of mycobacterial diagnosis. Six NTM infections and one MTB infection appeared to be unmasked by HAART. Clinical features at presentation were non-discriminatory. On imaging, patients with MTB more often had parenchymal lung disease, whilst thoracic and abdominal lymphadenopathy

was common in both groups. None of the patients with NTM had AFB smear positive respiratory specimens. Whereas the yield of blood cultures was low in patients with MTB, bone marrow specimens were diagnostic in all patients. Mortality was 8% for MTB and 30% for NTM cases. Immune reconstitution disease was observed in 52% of MTB and 30% of NTM patients. (Table 1.)

### Conclusion

Clinical and laboratory characteristics of patients with MTB and NTM overlap. In patients with suspected disseminated mycobacterial infection, prior or concurrent AIDS defining illnesses and recent HAART initiation favour NTM, while  $>100$  CD4 T-cells/mm<sup>3</sup> and parenchymal lung disease are suggestive of MTB.

**Table 1:**

	<b>MTB (n = 21)</b>	<b>NTM (n = 10)</b>	<b>p value</b>
Prior/concurrent AIDS-defining illness (%)	2(10)	7(70)	0.001
Median CD4 count at MTB/NTM diagnosis, cells/mm <sup>3</sup> (IQR)	51(13–142)	20(5–33)	0.049
On HAART at MTB/NTM diagnosis (%)	3(14)	6(60)	0.015
Parenchymal lung disease on CT scan* (%)	17(90)	4(44)	0.02
Thoracic/abdominal lymphadenopathy on CT or US scan* (%)	19(91)	8(80)	0.577
Positive AFB smear on sputum/BAL* (%)	7(44)	0(0)	NA
Positive sputum/BAL culture* (%)	12(86)	6(86)	I
Positive blood culture* (%)	1(11)	6(86)	0.009
Positive bone marrow culture and/or histology* (%)	6(100)	7(100)	NA

\*In those who had investigation(s) performed.

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