Mycobacterium avium-intracellularre infections, not as opportunistic as we thought!

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Introduction

Mycobacterium avium-intracellularre (MAI) complex, a nontuberculous mycobacterium, is an opportunistic infection historically associated with immunocompromised patients. However, there is also a known association, and increasing incidence, within both the geriatric patient population and patients with underlying lung disease, such as pulmonary tuberculosis, bronchiectasis, and chronic obstructive pulmonary disease (COPD).

Clinical Case

- 63-year-old man with a 45-pack year smoking history, COPD, and recurring pneumonias (refractory to treatment), presented to the ED due to a new pulmonary cavitary lesion.
- The initial presentation was in December 2022, he presented to the ED with chest pain and tachycardia. A CT scan demonstrated a RLL nodule, concerning for pneumonia. He underwent a six-day course of antibiotics and was discharged home.
- Upon follow-up with his pulmonologist, he underwent repeat CT imaging, again concerning for infection, prompting a 2nd course of antibiotics.
- Due to his persistent symptoms, another CT scan was obtained in July 2023, which showed a new thick-walled cavitary lesion (12.1 x 6.7 x 6.3 cm), in the right upper lobe. He was instructed to return to the hospital.
- On re-presentation to the hospital, he was hemodynamically stable and denied acute worsening of his symptoms; instead, he reported progressive worsening since the onset of his original pneumonia.
- Admission labs were notable for mild leukocytosis & elevated inflammatory markers.
- Three AFB smears were obtained to rule out Tuberculosis; all were negative. HIV testing, and serum blood cultures were also negative.
- As per Infectious Disease, the underlying causative agent was thought to be a Nontuberculous mycobacteria or fungal infection.
- Pulmonology was consulted and performed a diagnostic bronchoscopy (with BAL), which showed purulent mucus plugging coming from the right upper lobe.

Clinical Case (continued)

The patient was discharged home on a four-week course of amoxicillin/clavulanic acid.
- The lavage microbiology report later returned positive for MAI in two samples.
- The patient was notified of these results, instructed to stop his antibiotics, and to follow-up with Infectious Disease.

Conclusion

While MAI is known to be an opportunistic infection, it is commonly associated with immunocompromised patients. However, it is known to also target geriatric patients and those with underlying lung disease/damage, and given the increasing incidence of MAI within these communities, it is important to emphasize these at-risk populations to the medical community for proper consideration. We demonstrate this case with the goal of raising this awareness.

References