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Pulmonary infection by *Mycobacterium avium-intracellulare* complex in a tertiary hospital

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Background: Pulmonary infection by atypical mycobacteria is uncommon in our environment, despite its high impact on patients' quality of life.

Material/methods: We performed a retrospective observational study to analyze the clinical and microbiological characteristics, radiological pattern and outcome in patients with pulmonary infection by *Mycobacterium avium-intracellulare* complex (MAC) in a tertiary hospital (HRyC) during 2003-2016. Pulmonary infection by MAC was defined according to diagnostic criteria of ATS/IDSA (2007). Cure was defined as symptomatic improvement, microbiological eradication and at least stabilization of pulmonary lesions. Data were collected and analyzed using the statistical analysis program SPSS 18.0.

Results: A total of 224 patients with MAC isolates in respiratory samples were identified, of whom 31 (13.9%) met diagnostic criteria for lung infection. 67.7% were women, with a median age of 64 years old. 16.1% of the patients were immunocompromised, 25.8% had chronic pulmonary disease, 12.9% cystic fibrosis, 22.6% previous pulmonary tuberculosis, and 54.8% had pulmonary bronchiectasis. 13% had lived in South and Central America. Sputum was the respiratory sample where MAC was more frequent isolated (77.4%). Mean incubation time was 7.7 weeks. Drug susceptibility test was available in 48.4% of the patients. Summary of therapy, drug resistance pattern and adverse events are shown in Table 1. Mean time of symptoms was 8.8 months. Cough was the most frequent

symptom (67.7%), followed by productive sputum (58.1%). The most common radiological pattern was nodular-bronchiectasis. Clinical and radiological data are shown in Chart 1. Rate of cure at 12 months after diagnosis was 45%. 16.1% of patients had poor adherence to treatment. Fourteen patients died, 2 of them (6.4%) related to pulmonary infection by MAC.

Drug	Indication	Drug resistance strains ¹	Antibiotic-related toxicity	Stop drug due to toxicity
Macrolides ²	26(92.8%)	1/15(6.6%)	8(28.5%)	5(17.8%)
Ethambutol	27(87.1%)	5/10(50%)	4(14.8%)	3(75%)
Rifamycins ³	18(64.2%)	7/10(70%)	6(21.4%)	6(21.4%)
Levofloxacin	3(9.7%)	0	3(100%)	2(66%)
Linezolid	2(6.5%)	1/1(100%)	2(100%)	0
Amikacin	7(22.6%)	6/13(46.1%)	1(14.3%)	1(100%)

¹According to available antibiotics, ²Clarithromycin/Azithromycin, ³Rifampicin/Rifabutin.

Conclusions: Pulmonary MAC infection occurs more frequently in women, in the 6th decade of life and with underlying lung disease. Respiratory symptoms were usually subacute. More frequent radiological pattern was nodular-bronchiectasis. Rate of cure was low (45% at 1st year). Mortality related to MAC pulmonary infection was 6.4%. MAC presented a high incidence of drug resistance. Rate of adverse events related to drug tolerability was high. Further prospective studies are needed to determine the optimal management for MAC pulmonary infection.

