

Non-tuberculous mycobacteria isolates in a paediatric cystic fibrosis unit in Madrid

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Background: Non-tuberculous mycobacteria (NTM) include all mycobacteria except *Mycobacterium tuberculosis* complex and *M. leprae*. They are widely distributed in the environment. The most important risk factor to acquire them is tobacco, followed by chronic pulmonary disease, as cystic fibrosis (CF).

In the last years, there has been an increase of NTM in samples from CF patients. Moreover, the prevalence and type of NTM in these patients depends on age.

The aim of this study was to analyze the isolates of NTM in CF patients from a paediatric unit in Madrid.

Material/Methods: During the period of study (from March 2009 to May 2016), samples of CF patients from Hospital Niño Jesús in Madrid were processed in our mycobacterial laboratory. Samples were decontaminated using NAOH-N-acetyl-l-cysteine-oxalic acid, inoculated in the *Mycobacterial Growth Indicator Tube* (MGIT) medium and incubated for 2 months at 37°C in Bactec™ MGIT™ 960 system (Becton-Dickinson). For positive samples, a Ziehl-Neelsen staining was performed. Final identification was obtained with DNA probes before 2013, and after this date with Maldi-Tof mass spectrometry (Bruker-Daltonics) in MGIT or Coletsos medium. The charts were reviewed to get demographic data and treatment.

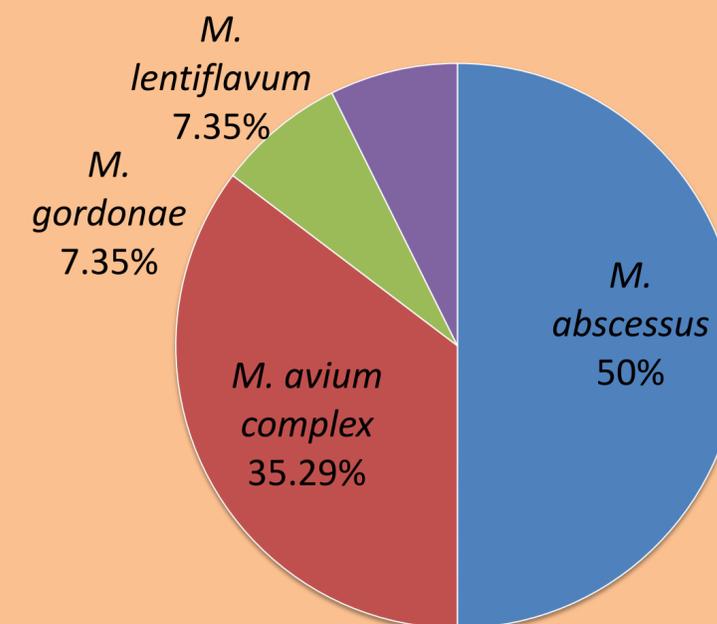
Results: During the period of study a total of 200 samples were positive for NTM (4 BAS, 192 sputum, 4 LBA), from 28 patients. All patients were under 18 years old and males accounted for 64.28%.

Prevalence of NTM isolates in the paediatric CF unit studied did not show big differences during the study period with a mean of 10.14% patients with NTM isolates each year.

The relative frequency of NTM during the study period (considering one isolate per patient per year) is shown in the graphic.

Data of patients treated for NTM are shown in Table 1.

The treatment for *M. avium complex* isolates was clarithromycin, ethambutol and rifampicin in an 88.89% (8/9). However, the treatment for *M. abscessus* was more variable (different combinations of clarithromycin/azithromycin, ethambutol, rifampicin, imipenem/meropenem, amikacin, linezolid, and tigecycline).



Treatment/NTM	<i>M. abscessus</i>	<i>M. avium complex</i>	<i>M. gordonae</i>	<i>M. lentiflavum</i>
Treatment yes	9	9	0	0
Treatment no	0	5	5	4

Conclusion: *M. abscessus* is the most frequently isolated NTM species in CF patients. All patients with *M. abscessus* received treatment, which shows the importance of this NTM in CF patients. However, the clinical meaning of *M. avium complex* in CF is uncertain, and a lot of factors are considered about treating or not. Moreover, MAC treatment seldom contains an injectable aminoglycoside unlike the treatment for *M. abscessus*, which is considered more aggressive. *M. gordonae* and *M. lentiflavum* are usually considered contamination or simple colonization and no patient of our series received treatment.