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| **Nontuberculous mycobacteria (NTM) in Australians with cystic fibrosis (CF): A national study** |
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| **Introduction/Aim:** This study aims to understand the aetiology and epidemiology of chronic nontuberculous mycobacterial (NTM) infection, particularly *Mycobacterium abscessus* (Mabs)*,* in Australians with CF. **Methods:** Nationally, 18 CF services prospectively collected respiratory samples from people with CF for NTM culture at regular clinic appointments (Baseline, 6 months, 1 year, then annual to 4 years); associated clinical, microbiological, geographic and social data was supplied by the clinic and supplemented by linkage with Australian CF Data Registry. **Results:** Cumulatively, 20.3% of the 1321 cohort cultured NTM during the observational period. Species from the pathogenic *Mycobacterium avium* complex (MAC) and Mabs occurred at a similar rate (~8%), 6.9% of the cohort cultured other (non-Mabs, non-MAC) NTM species. *M. chelonae* was the most frequently isolated other NTM species (30% of other NTM+ participants). Mabs infection progressed to pulmonary disease (PD) more frequently than MAC infection (47.2% and 20.5%, respectively (p<0.01)). No other NTM+ participants were diagnosed with NTM-PD. Eradication therapy was administered in 80.4% of participants with Mabs-PD and 69.5% of participants with MAC-PD. Treatment cleared the infection in 46% and 61% cases, respectively. Participants <25 years had higher prevalence of Mab*s* than older participants (p<0.01 to p<0.0001). Chronic *Pseudomonas aeruginosa* infection reduced the risk of acquiring a pathogenic NTM species (Mabs Odds Ratio (OR) 0.56, CI 0.34 – 0.93, p=0.02; MAC OR 0.62, CI 0.40 – 0.97 p=0.037). Macrolide usage reduced the risk of acquiring a Mabs infection (OR 0.25, CI 0.13– 0.52, p=0.0001). **Conclusion:** In Australia, pwCF <25 years of age were more likely to be infected with Mabs than older pwCF, progression to PD was more common with Mabs infection and eradication successful in less than half of treated participants. Chronic *P. aeruginosa* infection reduced the risk of NTM infection. Macrolide usage reduced the risk of infection by Mabs. **Grant Support:** NHMRC (APP1102494) and USA CFF (BELL19A0) |