No impact of respiratory colonization with Mycobacterium avium-intracellulare in patients with cystic fibrosis on long-term course of the forced expiratory volume in one second (FEV1) – a 10 years case-control study.

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Introduction

The 2007 American Thoracic Society/Infectious Diseases Society of America (ATS/IDSA) recommendations on Nontuberculous Mycobacterial Pulmonary Diseases (NTM PD) define an obligatory treatable respiratory infection with NTM by existence of all of the following criteria:
clinical (i.e. respiratory symptoms), radiological (i.e. nodular or cavitary opacities on chest radiograph, or multifocal bronchiectasis with multiple small nodules on HRCT) and microbiological criteria (detection of NTM by culture in respiratory samples).
Cystic fibrosis (CF) patients already fulfill clinical and radiological criteria caused by the underlying disease. Therefore, the evaluation of a NTM detection in CF-patients regarding the start of long term antimycobacterial treatment is difficult.

Methods

We performed a single center chart review of all (n=186) CF patients and identified all patients with positive microbiological criteria for NTM-infection according to ATS. These 26 patients were matched with 46 CF patients without NTM detection in respiratory samples. Criteria for matching at the time of the first NTM-detection were age, sex, FEV1 and Body Mass Index. We compared the course of these groups over a period of at least 10 years (5 years before and 5 years after first detection of NTM).

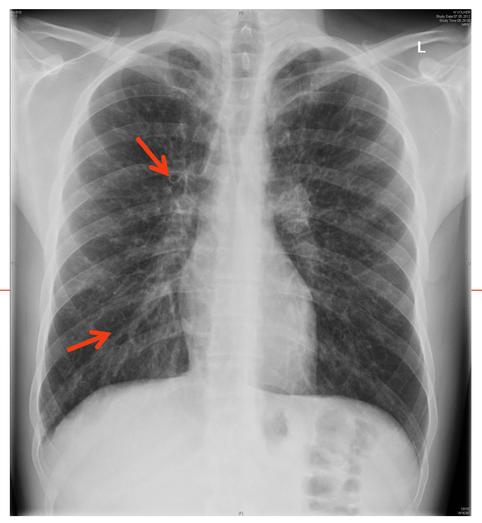


Fig. 1: ring structures, streaky and nodular opacities on chest radiograph

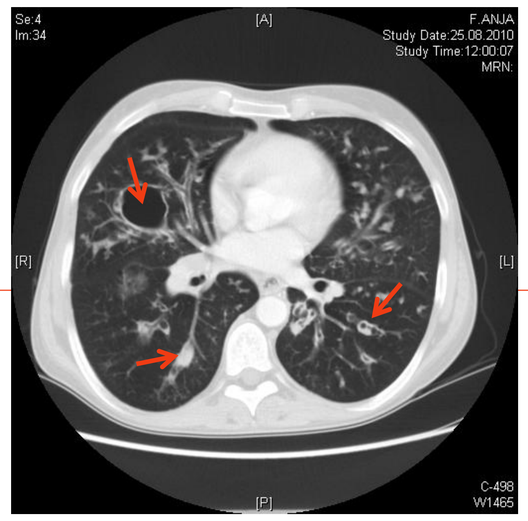


Fig. 2: bronchiectasis, small nodules and bronchial swelling on HRCT.

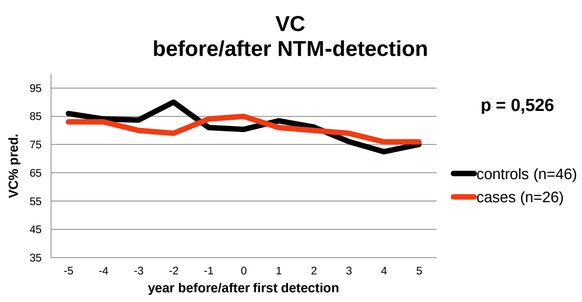
Results

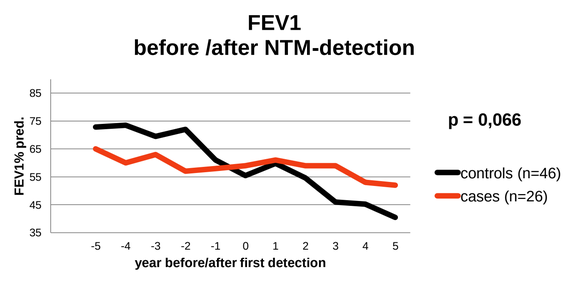
Twenty-six cases with repetitive NTM detection were included (M. avium-intracelluare-MAC: n=13; M. abscessus: n=10, M. intracellulare and M. gordonae: n=1, M. gordonae: n=2).

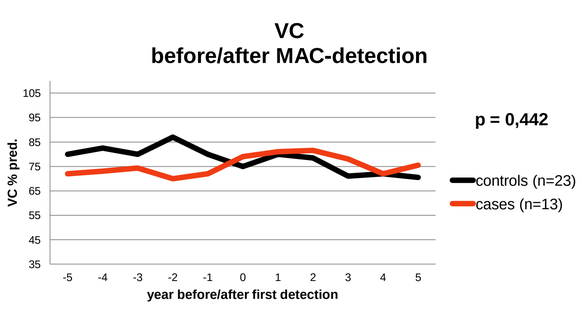
Radiological proof for bronchiectasis was available in 95% of all patients (cases and controls).

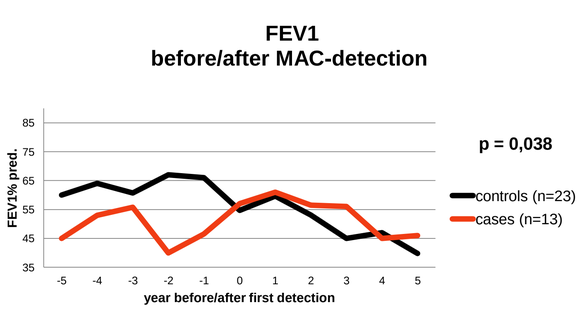
None of the patients with detection of MAC, M. gordonae and 6 of 10 patients with M. abscessus received specific NTM-treatment according to ATS/IDSA recommendations.

No significant difference in the annual decline of the lung function parameters (FEV1, VC) between cases and controls was found. In contrast, a trend towards a decelerated decline in FEV1 in non-treated patients with MAC detection was shown.









Conclusion

Our results indicate that MAC-detection in respiratory material of CF patients does not necessarily require specific treatment and that the ATS criteria for NTM pulmonary infection are non-applicable in CF patients.

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