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Characterization of Non-tuberculous Mycobacteria Isolates in a National Mycobacterial Laboratory in Panama:

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781. Non-Tuberculous Mycobacterium: Often a Missed Entity

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Background. Initially referred to as Lady Windermere syndrome, the prevalence of Non-Tuberculous Mycobacterium (NTM) is on the rise globally. In India, the TB capital of the world, these infections still go unrecognized, as the clinical presentation of all mycobacterial diseases are similar. This is of clinical relevance as misdiagnosis may lead to unwarranted or inappropriate therapy.

Methods. We conducted a retrospective study of adults suspected of having mycobacterial infection. Records of patients admitted with suspected TB from January 2015 to December 2017 were reviewed; clinicoradiological features were correlated with the organism isolated; treatment given and outcomes were recorded.

Results. Out of 877 suspected patients, 245 patients had microbiologically proven *Mycobacterium tuberculosis* and 34 had NTM (3.8%). Pulmonary infection was seen in 19 cases (56%), rest were extra pulmonary (34%).

	Pulmonary	Skin	Pleural/Ascitic	Bone joints	Lymph Node
M. abscessus	3	–	1	1	–
M. intracellulare	7	–	1	–	–
M. kansassi	7	–	–	–	–
M. fortuitum	–	–	–	–	1
M. chelone	–	1	–	–	–
M. interjectum	1	–	–	–	–
Others	1	3	5	2	–
Total	19	4	7	3	1

Fever was the commonest symptom (62%) others being cough (50%), breathlessness (41%), hemoptysis (15%), weight loss (3%), chest pain (3%), and back ache (12%). Symptoms were prolonged (>1 month) in 65% of cases. Radiologically, cavitations (42%), lung nodules (32%), and infiltrates (32%) were commonly seen. Upper zone predilection was noted in 68% of cases. Past tuberculosis was the major risk factor seen in 42% of cases while 26% were immunocompromised. Macrolide resistance was noted in none of our patients. Twenty-four out of 34 cases were AFB smear positive (71%), but MTB gene Xpert was negative. Our series includes four patients who did not respond to first-line anti-tubercular therapy (ATT) and were suspected to have multi-drug-resistant (MDR) tuberculosis. Cultures later grew NTM and the patients improved with macrolide regime.

Conclusion. NTM is an underreported infection in a developing country like India with a high TB prevalence. Similar clinical features and morphology create a greater diagnostic dilemma. Usage of molecular techniques and AFB culture should be made mandatory in all suspected cases of tuberculosis. NTM should always be considered in ATT nonresponders before starting them on MDR regime.

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782. Risk Factors, Clinical Characteristic, and Treatment Outcomes for Nontuberculous Mycobacterial Disease in Mexico

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Background. Nontuberculous Mycobacteria (NTM) cause diverse clinical manifestations in multiples clinical setting, and in the past years, there has been an increasing prevalence and variability among geographic regions, this associated with a diversity of hosts and clinical manifestations. We objective was evaluated the clinical and microbiologic characteristic, and the treatment outcomes related to slowly growing mycobacteria (SGM) and rapidly growing mycobacteria (RGM).

Methods. When conducting a retrospective study between January 2001 and December 2017, retrospectively their medical records were reviewed for obtainments of site of isolation or infection, comorbidities or predisponent condition, clinical and radiographic presentation, and treatment outcomes.

Results. A total of 90 patients with isolated of RGM and 87 within SGM were evaluated among these *M. avium and M. fortuitum* were the most predominant species. HIV infection was the predominat risk factor for SGM infections ($P < 0.001$); the conditions associated to RGM infections were cancer ($P = 0.02787$); diabetes mellitus (DM) ($P = 0.01418$), chronic kidney disease (CKD)($P = 0.04662$), use of immunosuppressive medication ($P < 0.001$), and use of invasive device only were present in the RGM group. In the RGM group, lung infection was the most common site of infection (43%); in the SGM group, the disseminated disease was the most common (54%). The time of treatment was more prolonged in the SGM group (196 vs. 229 days, $P = 0.0309$). In the RGM group, the rate of cure was higher in the subgroup of Mycobacterial stream infections and disseminated disease (15 vs. 5, $P = 0.0146$). In the analysis of lung infection who meet the IDSA/ATS criteria were divided into the group with treatment and the group without treatment, the outcomes were not significative in both groups.

Conclusion. The NTM infections are an important cause of disease in patients with chronic conditions such as cancer, immunosuppressive medication, CKD, use of invasive device, and DM. HIV infection persist as the first risk factor for *M. avium* disseminated disease, the treatment for this latter condition in spite of more prolonged, it had a lower rate of cure. The treatment of lung infections for NTM must be individualized although the IDSA/ATS criteria are met.

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783. Characterization of Non-tuberculous Mycobacteria Isolates in a National Mycobacterial Laboratory in Panama: 2012–2015

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Background. Nontuberculous mycobacteria (NTM) are becoming more frequently isolated in microbiology laboratories. There is no standardized diagnosis, treatment, and/or monitoring of patients with NTM disease. We described the experience of the Panama National Mycobacterial Laboratory in isolating NTM in patients suspected to have active tuberculosis in Panama.

Methods. Data registries of the National TB Program Laboratory of Panama between 2012 and 2015 were reviewed. Demographic information, relevant history, sample source, and isolate identified for each specimen obtained at the time of specimen submission was extracted. Identification of mycobacterial species were made using culture and PCR. Data were exported to an Excel workbook and a descriptive analysis was performed using STATA.

Results. A total of 4,545 samples were received during this period. Of these, 288 (6.3%) were not processed. From the remaining 4,257 samples, 705 (16.5%) were negative, 2,783 (65.3%) were positive for *M. tuberculosis*, and 769 (18%) were confirmed NTM. NTM species identification was achieved in 715 (93%) using PCR. Median age was 55 years (0 – 92); 49.4% were male. The most frequent NTM isolate was *M. avium* complex in 172 (22.3%) samples, followed by *M. fortuitum* in 131 (17%). *M. chelonae* was isolated in 98 (12.7%) samples, *M. gordonae* in 50 (6.5%), *M. scrofulaceum* in 20 (2.6%), and *M. triviale* in 16 (2.0%). NTM isolation steadily rose over the study period with 490 (63.7%) of the samples being from 2015 and 465 (94.5%) of these typified by PCR. Specimens mainly originated from the Panama metropolitan area (88.2%) and were mostly sputum samples (70.8%).

Conclusion. Nontuberculous mycobacteria represented an important proportion of isolates among TB suspects in Panama. The implementation of more sensitive diagnostic techniques is increasing the recovery of NTM. Further evaluation of the clinical significance of these finding is required for appropriate guideline implementation.

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784. The Changing Epidemiology of Disseminated *Mycobacterium avium* complex in the United States

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Background. The epidemiology of disseminated *Mycobacterium avium* complex (DMAC) infection in the United States is changing. Previously most DMAC occurred in adults with advanced AIDS. Since the development of effective antiretroviral therapy, the incidence of DMAC in AIDS has fallen more than 10-fold. Malignancy, immunosuppression, and tumor necrosis factor inhibitors are known risk factors for DMAC. We sought to describe the epidemiology of DMAC disease in HIV seronegative patients in the United States.

Methods. We performed a retrospective analysis of a commercial database (Explorys Inc., Cleveland, OH). This database contains an aggregate of Electronic Health Record data from 26 major integrated healthcare systems in the United States from 1999 to present. Explorys contains de-identified information from over 50 million patients, 360 hospitals, and over 317,000 providers. We identified a total of 571 persons diagnosed with DMAC, based on Systemized Nomenclature of Medicine-Clinical