779. Mycobacterium tuberculosis Prosthetic Joint Infections: A Case Series and Literature Review
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Background. Mycobacterium tuberculosis is a rare cause of prosthetic joint infection (PJI), as most countries with high prevalence of tuberculosis have limited access to arthroplasty. We aimed to characterize the diagnosis, the management, and the outcome of M. tuberculosis PJI.

Methods. All cases of M. tuberculosis PJI documented in a network of 7 referral centers in France were retrospectively reviewed. Data were collected from medical files on a standardized questionnaire, including diagnosis, management, and outcome. In addition, we performed a systematic literature review using the keywords “prosthetic joint,” and “tuberculosis.”

Results. During years 1997–2016, we managed 13 patients (8 males, 5 females, median age 79 years [range, 60–86]) with documented M. tuberculosis PJI, involving hip (n = 6), knee (n = 6), or shoulder (n = 1). Median time from arthroplasty to PJI diagnosis was 9 years [0.4–20]. The diagnosis was obtained on joint aspirates (n = 9), or synovial tissue (n = 4). PCR was positive in all cases tested (5/5). Median duration of antituberculosis treatment was 14 months (6–32). Nine patients underwent surgery: debridement (n = 4), definitive resection arthroplasty (n = 3), and revision arthroplasty (1-stage exchange, n = 2). PJI was controlled in 12 patients. One patient died of disseminated tuberculosis. The literature review identified 70 additional cases of documented M. tuberculosis PJI, with a favorable outcome in 79% (11/14) of patients with no surgery, 85% (11/13) with debridement and prosthesis retention, 86% (19/22) with revision arthroplasty, and 81% (17/21) with definitive resection (NS).

Conclusion. M. tuberculosis PJI can be controlled with prolonged antituberculosis treatment in most cases, with or without surgical treatment. This case series and literature review suggest that the paradigms for the management of M. tuberculosis PJI may differ from PJI related to other pathogens, for which surgery is required.

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780. Incidence and Prevalence of Nontuberculous Mycobacterial Lung Disease in US Medicare, 2008–2015
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Background. Previous research has reported nontuberculous mycobacterial lung disease (NTMLD) prevalence of 47 per 100,000 among Medicare beneficiaries 265 years in 2007, with an average increase of 8.2% annually between 1997 and 2007. In this study, we have evaluated NTMLD incidence and prevalence in Medicare between 2008 and 2015.

Methods. Patients diagnosed for NTMLD with an ICD9 031.0 were identified from the Medicare database (N≈30 million yearly), not including the Part C portion. Individuals who incurred at least 2 medical claims ≥30 days apart between 2007 and 2015 were considered a positive NTMLD case, yielding 58,294 patients. All individuals fulfilling the case definition each calendar year were considered as prevalent cases. Incident cases included those meeting case criteria and who did not have a Medicare claim for NTMLD in the prior year. Poisson regression was used to estimate yearly confidence intervals. ARIMA models were used to forecast incidence and prevalence over 2016–2025.

Results. Patients with NTMLD in the Medicare database had a mean age of 74 (standard deviation: ±10) years. Sixty-nine percent were women and 89% white. Yearly NTMLD incidence increased from 20.7 (95% CI: 20.2–21.3) in 2008 to 28.1 (27.5–28.7) in 2013 per 100,000 Medicare beneficiaries and leveled to 27.6 (26.9–28.2) in 2014 and 25.9 (25.3–26.5) in 2015 per 100,000. Yearly NTMLD prevalence increased throughout the observation period from 0.003 (0.002–0.004) in 2008 to 0.006 (0.005–0.007) in 2015 per 100,000 Medicare beneficiaries. Incidence was 28.1 vs. 14.7 per 100,000 in 2015 in Medicare beneficiaries 265 years vs. those <65 years, respectively. Prevalence was 70.2 vs. 27.9 per 100,000 in 2015 in Medicare beneficiaries 265 years vs. those <65 years, respectively. In 2015, incidence and prevalence were higher in women (33.9 vs. 16.0/100,000 and 86.2 vs. 34.6/100,000, respectively) and among individuals of Asian origin compared with White (41.1 vs. 27.6/100,000 and 89.4 vs. 68.7/100,000, respectively). The 10-year incidence and prevalence forecasts were presented in figures.

Conclusion. In US Medicare beneficiaries, NTMLD incidence increased from 2008 through 2013 and leveled off in more recent years, while NTMLD prevalence continued to rise through 2015.
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 unrequired or inappropriate treatment.

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 organisms 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/Acute | Bone joints | Lymph node |
|-----------|------|--------------|-------------|------------|
| M. abscessus | 3    | -            | 1           | -          |
| M. intracellulare | 1    | -            | -           | -          |
| M. kansasii | 7    | -            | -           | -          |
| M. fortuitum | –    | –            | -           | -          |
| M. chelonae | –    | –            | -           | -          |
| M. interjectum | 1    | -            | -           | -          |
| Others | 1    | 3            | 5           | 2          |
| Total | 19   | 4            | 7           | 3          |

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 (1-2 months) in 65% of cases. Radiologically, cavitations (42%), lung nodules (32%), and infiltrates (32%) were commonly seen. Upper zone predominance 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 regimen.

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 observations of site of isolation or infection, comorbidities or predispension 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 predominant risk factor for SGM infections (P < 0.001), the conditions associated to RGM infections were cancer (P = 0.0278); 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 = 0.0039). In the RGM group, the rate of C. difficile 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 infection is 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 Mycobacteriology Laboratory in Panama: 2012–2015

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Background. Nontuberculous mycobacteria (NTM) are becoming more frequent isolated in microbiology laboratories. There is no standardized diagnostic, 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 tuberculous 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 R 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 (66.2%) 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. gordone in 56 (6.6%), M. scrofulaceum in 20 (2.6%), and M. triivalve in 16 (2.8%). NTM isolation steadily rose over the study period with 490 (63.7%) of the samples being from 2015 and 465 (94.5%) of these typed 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, 350 hospitals, and over 317,000 providers. We identified a total of 571 persons diagnosed with DMAC, based on Systemized Nomenclature of Medicine-Clinical