

Conclusion. Contrary to what is expected, *Mtbdsl* did not significantly contribute to better treatment outcomes. High-risk mutation *gyrA* 94Gly was prevalent and associated with poorer outcomes. Small sample size and a wide variety of mutations preclude generalizability of our results.

Disclosures. All authors: No reported disclosures.

1364. Pretreatment Chest X-ray Stability Duration and Tuberculosis Disease in San Diego County, 2012–2017

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Background. Repeated chest X-rays serve as an essential screening tool to identify and describe new or stable (i.e., unchanged) lung abnormalities suggestive of pulmonary tuberculosis (TB) disease. The time for which a patient's chest X-ray has not demonstrated appreciable change prior to treatment, or pretreatment chest X-ray stability duration, has been considered clinically useful in distinguishing inactive from active disease at four or 6 months. This relationship, however, has not been previously quantified.

Methods. This study relied on retrospective medical record review to assess the relationship of documented pretreatment chest X-ray stability duration thresholds relative to four and 6 months with a future clinical or culture-confirmed (Class 3) diagnosis of pulmonary TB disease. Multivariable logistic regression quantified this association among 146 patients who were evaluated and started on treatment for pulmonary TB disease in the San Diego County tuberculosis clinic between May 2012 and March 2017.

Results. After adjusting for age and Class B1 TB, Pulmonary status, a CXR stability duration of 4 months or more was not significantly associated with a Class 3 pulmonary TB diagnosis (adjusted odds ratio [AOR], 0.830; 95% confidence interval [CI], 0.198–3.48). Results were similar for the 6-month cut-point after adjusting for age and Class B1 Pulmonary status (AOR, 0.970; 95% CI, 0.304–3.10). Compared with less than 4 months, CXR stability durations of four to 6 months (AOR, 0.778; 95% CI, 0.156–3.89) and greater than 6 months (AOR, 0.875; 95% CI, 0.187–4.10) were also not significantly associated with a Class 3 TB diagnosis after adjusting for covariates.

Conclusion. Repeated chest X-rays remain a valuable tool for clinicians identifying and describing new or unchanged lung abnormalities suggestive of pulmonary TB disease. This study found no statistically significant association between pretreatment chest X-ray stability duration and subsequent TB disease diagnosis, with a wide range of estimates compatible with the data, suggesting the stability duration cut points relative to four and 6 months may not be as informative as previously understood.

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1365. Profiling Extrapulmonary Nontuberculous Mycobacteria Infections and Predictors for rapid-growing Species: A Multi-Center Retrospective Study

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Background. Nontuberculous mycobacteria (NTM) disease is increasing worldwide and is an important cause of morbidity and mortality. It is found that 20 to 30% of NTM isolates are of extrapulmonary origin. However, Studies about extrapulmonary NTM infections have been limited. Thus, we aim to describe the diversity of NTM infections and correlate these observations with clinical data.

Methods. We analyzed all symptomatic patients with positive NTM cultures in sterile extrapulmonary sites at three tertiary care centers in South Korea between January 2006 and June 2018. We collected patient information including predisposing factors, diversity of NTM isolates, antimicrobial susceptibility testing, treatment regimens, and outcomes.

Results. A total of 117 patients (46 males vs. 71 females) were included. The median age of the patients was 54 years. There are a lot of infections associated with medical procedures like surgery, but about half of cases (54.7%) are unknown origin. Skin and soft-tissue infections predominated (34.2%), followed by bone and joint infections (28.2%). Of 117 NTM isolates, 66 NTM subspecies were identified. Mycobacterium intracellulare (34.8%) was the most common species identified, followed rapid-growing NTM (RGM) species such as *M. fortuitum* complex (21.2%), *M. abscessus* (15.2%), *M. massiliense* (10.6%), and *M. chelonae* (9.1%). In skin and soft-tissue infections,

RGM species were predominantly identified (26/28, 92.9%), whereas slow-growing NTM (SGM) species were mainly identified in bone and joint infections (18/26, 69.2%). The difference of isolated sites was verified by post hoc test and female sex (OR 4.72; $P < 0.001$) and skin and soft-tissue infections (OR 25.33; $P < 0.001$) were identified as predictors of RGM by logistic regression analysis. Based on antimicrobial susceptibility testing, fluoroquinolone and macrolide were mainly used for RGM treatment, and rifamycin-ethambutol-macrolide-based regimen was predominantly used for SGM treatment.

Conclusion. Skin and soft-tissue infection were predominantly caused by RGM, whereas bone and joint infection is mainly caused by SGM. Species-specific and region-specific data that integrate clinical and microbiologic information is crucial in determining treatment direction.

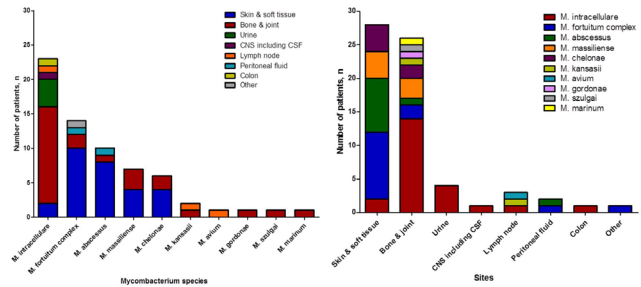


Table Antimicrobial regimens chosen in patients treated for nontuberculous mycobacteria infections

	N ¹	Duration of treatment ²	Numbers of antimicrobial use ³	Amik. acid	Cefox. tin	Ethamb. utol	Fluoroqui. nolone ⁴	Imige. nem	Isonia. zid	Liazid. olid	Macr. olide ⁵	Pyrazin. amide	Rifam. ycin ⁶	Tetracy. cine ⁷	TMP. SMX
Rapid growing NTM															
M. fortuitum complex	13	9.0	3.0	4	0	4	10	1	3	0	8	0	5	4	3
M. abscessus	8	12.0	3.1	2	2	1	5	2	1	1	8	1	2	3	0
M. massiliense	7	10.5	2.6	0	2	1	4	1	0	0	7	0	1	0	2
M. chelonae	6	10.5	2.8	0	0	1	4	1	0	1	7	0	1	2	0
Slow growing NTM															
M. intracellulare	18	12.0	2.9	2	0	13	7	1	3	1	15	2	16	1	1
M. kansasii	2	18.0	3.5	0	0	2	0	0	2	0	1	0	2	0	0
M. goodii	1	14.0	4.0	0	0	1	1	0	0	0	1	0	1	0	0
M. marinum	1	6.0	4.0	1			1				1		0	1	
Unspecified	12	11.0	2.1	1	0	3	3	1	1	0	8	0	3	4	1

¹Indicates the number of patients for whom there is treatment regimen data available.

²Indicates median duration in months of treatment

³Indicates mean numbers of antimicrobial used

⁴Macrolide includes azithromycin (5 patients) or clarithromycin (51 patients).

⁵Fluoroquinolone includes ciprofloxacin (17 patients) or moxifloxacin (10 patients) or levofloxacin (10 patients).

⁶Tetracycline includes doxycycline (12 patients) or minocycline (3 patients).

⁷Rifamycin includes rifampicin (29 patients) or rifabutin (3 patients).

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1366. Prognostic Factors for Unfavorable Outcomes of Patients with Spinal Tuberculosis in a Country with an Intermediate Tuberculosis Burden: a Multi-Center Cohort Study

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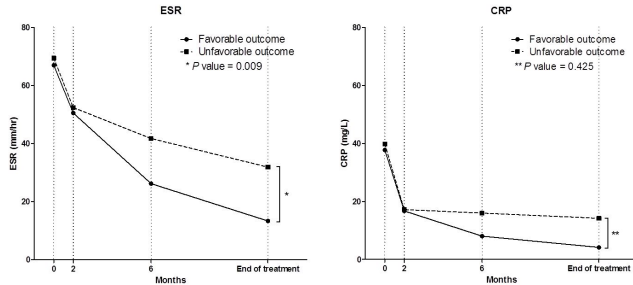
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Background. Spinal tuberculosis (TB) remains an important concern. Although spinal TB often has sequelae such as myelopathy after treatment, the predictive factors affecting such unfavorable outcomes are not yet known. Therefore, we investigated the clinical manifestations and predictors of unfavorable treatment outcomes in patients with spinal TB.

Methods. We performed a multi-center retrospective cohort study of patients with spinal TB. The clinical features, comorbidities, laboratory data, imaging findings and treatment outcomes of the patients were analyzed. The unfavorable outcome was defined according to previous studies. The prognostic factors for unfavorable outcomes as the primary outcome were determined using multivariate logistic regression analysis and a linear mixed model were used to compare time course of inflammatory markers during treatment.

Results. A total of 185 patients (85 males and 100 females) were included. The mean age of the patients was 57.2 years. Of them, 115 underwent surgery during treatment, with a median treatment duration of 12 months. Fifty-nine patients had unfavorable outcomes. In multivariate regression analysis, the factors associated with unfavorable outcome were old age (odds ratio [OR], 2.51; $P = 0.034$), acid-fast bacilli (AFB) smear positivity in specimens obtained through biopsy (OR, 3.05; $P = 0.039$), and elevated erythrocyte sedimentation rate (ESR) at the end of treatment (OR, 3.85; $P = 0.002$). Patients with unfavorable outcomes had a significant trend toward higher ESR during treatment compared with patients with favorable outcome ($P = 0.009$). Duration of anti-TB and surgical treatment did not affect prognosis.

Conclusion. Elevated ESR at the end of treatment could be used as a marker to identify spinal TB patients with a poor prognosis. Patients whose ESR are not normalized during treatment, as well as those with old age and AFB smear positivity, should be aware of unfavorable outcomes.



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1367. Tele-TB: Using TeleMedicine to Increase Access to Directly Observed Therapy for Latent Tuberculosis Infections

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Background. Otherwise healthy patients with latent tuberculosis infection (LTBI) have a 10 percent lifetime risk of progression to active TB disease. This risk is higher in recently exposed persons, young children, and the immunocompromised. Treatment of LTBI decreases the risk of progression. However, traditional treatment regimens required either daily isoniazid (INH) for 9 months, with historically poor compliance, or 12-week directly-observed therapy (DOT) with INH and rifapentine (RPT), with improved compliance but challenges of coordinating weekly clinic visits, further complicated if patients must travel a great distance for care and/or miss considerable amounts of time from work or school to attend encounters.

Methods. Our referral area is complicated by congested traffic often resulting in one-way commutes in excess of 2 hours. These travel times would be prohibitive for conducting traditional weekly in-clinic DOT. In an effort to improve access to DOT, we implemented TeleMedicine LTBI DOT within a military pediatric infectious diseases clinic. Local providers were requested to refer patients aged two and older diagnosed with LTBI to our DOT TeleMedicine clinic. All patients without absolute contraindications for receiving INH and/or RPT were offered LTBI treatment via weekly TeleMedicine DOT or daily INH. If the family opted for TeleMedicine DOT, the first visit was performed in person to discuss treatment options, demonstrate use of the TeleMedicine software, and to ensure the patient was able to take the medications. Baseline information about patient travel time to our facility for patients enrolled in the LTBI DOT clinic was determined.

Results. To date, seven patients have completed LTBI treatment via TeleMedicine DOT. Average one-way travel time to our facility for patients participating in the TeleMedicine DOT was 72 minutes. Actual time spent in the TeleMedicine DOT encounters was less than 10 minutes. Appointments were arranged to take place outside usual school and work hours so patients could complete DOT with minimal interruptions to daily life, resulting in 100% treatment compliance and completion.

Conclusion. Conducting DOT using TeleMedicine is a viable and time-saving measure that still allows for high levels of patient compliance and treatment completion while minimizing interruptions to academic and work schedules.

Figure 1: Average One-Way Travel and Appointment Times for In-Person and TeleMedicine DOT Encounters

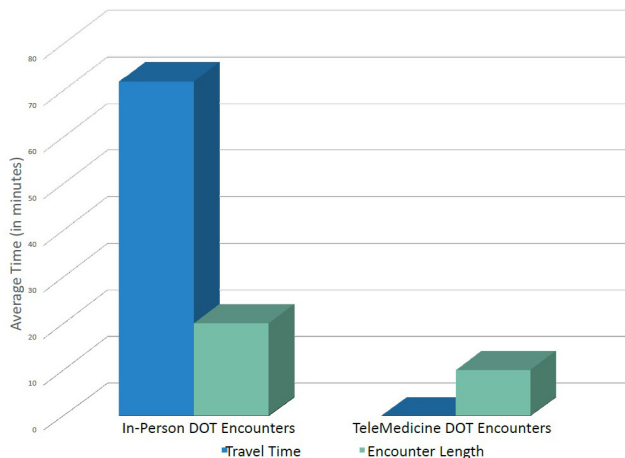


Figure 2: Distances Traveled by Patients while Undergoing TeleMedicine Directly-Observed Therapy Treatment



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1368. Tuberculosis in Older Patients in Cali, Colombia (2011–2016): A Hospital-Based Cohort Study

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Background. Tuberculosis (TB) in older adults is a public health concern worldwide. We aim to describe the outcomes of patients over 65 years old with a confirmed TB diagnosis. We furthermore assessed factors related to poor outcomes among this patient population.

Methods. This retrospective study included patients older than 65 years with a biological specimen positive by smear microscopy, culture, or GeneXpert. Clinical and microbiological data, information about drug-related side effects, adverse reactions, and TB treatment outcomes were reviewed. Patients were subsequently assigned to either the octogenarian group or non-octogenarian group, also the treatment success group or treatment nonsuccess group.

Results. A total of 108 patients were included. 59% were male, and 26% of patients were 80 years old or older. 81% of the patients presented pulmonary TB. Diagnostic delay greater than 90 days was present in 36% of the cases. There was a statistically significant difference in the rates of diabetes ($P = 0.004$) and COPD ($P = 0.017$) between the octogenarian group and non-octogenarian group. One hundred six patients started anti-TB therapy, 34% of cases were lost to follow-up, and 18% died. Patients of 65–79 years of age and those older than 80 years had similar mortality, 19% vs. 18%, respectively. When comparing treatment success ($n = 45$) and nonsuccess ($n = 22$) groups, most of the variables were found not to be statistically significant as TB risk factors, except malignancy ($P = 0.013$). Overall, survival of the patients was 78. 23% at 5 years follow-up; there were no differences between age groups.

Conclusion. The presence of baseline comorbidities as diabetes, malignancies and COPD, diagnosis delay, adverse events during anti-TB treatment and drug–drug interactions (DDI) makes this age group a different population, hence care models need to be evaluated to improve the indicators of the success of TB programs. Furthermore, the significant losses to follow-up require strict management of these patients and optimal coordination among health centers.

Disclosures. All authors: No reported disclosures.

1369. Clinical Manifestations, Treatment, and Outcome of Nontuberculous Mycobacteria (NTM) Infection in Adult-Onset Immunodeficiency Associated with Anti-interferon-gamma Autoantibodies in King Chulalongkorn Memorial Hospital

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Background. There is an increase of anti-interferon- γ autoantibodies syndromes because it is now well recognized, especially in the Southeast Asia region. One of the clinical features is an infection caused by nontuberculous mycobacteria (NTM). NTM infection in patients with anti-interferon- γ autoantibodies is usually severe, recurrent, and disseminated. In this study, we describe the clinical characteristics, treatment, and outcome of NTM infection in patients with anti-interferon- γ autoantibodies

Methods. A retrospective cohort study was conducted at the King Chulalongkorn Memorial Hospital, Bangkok, Thailand, during 2010–2018. Demographic, clinical, and microbiological data were collected and analyzed.

Results. A total of 45 patients were enrolled in this study. Twenty-nine patients were males, and 16 patients were females. The most common clinical manifestations