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Background. Latent tuberculosis infection (LTBI) treatment is essential in preventing the reactivation of tuberculosis. We compared the clinical and demographic characteristics of patients that have completed traditional therapy with 9 months of isoniazid (9H) with those that have completed 3 months of rifapentine plus isoniazid using directly observed therapy (3HP), focusing on adverse effects, a barrier to completion that may contribute to discontinuation of therapy.

Methods. We conducted a retrospective chart review (July 2013-March 2017) to compare the 9H group and 3HP group. Demographic and clinical variables were described by therapy type and groups were compared using Fisher's exact test or t-test, as appropriate.

Results. Patients in the study sample (n = 124) had a mean age of 49.8 (SD=14.8) years old. Approximately half received 3HP (n = 64, 51.6%). Demographics in the 3HP and 9H groups were similar. Significantly more patients in the 3HP group completed treatment (81.3% vs. 61.7%, $P < 0.0001$). No patients were lost to follow-up in the 3HP group, 14 (23.33%) were lost in the 9H group. Gastrointestinal (GI) upset (n = 16), elevated liver function tests (LFTs) (n = 11), and headaches (n = 9) were the most frequent side effects. Except for neuropathy and pancreatitis, all other adverse side effects had higher incidence in the 3HP group. Specifically, the incidence of GI symptoms (23.4% vs. 1.7%, $P = 0.0003$), weakness (9.4% vs. 0%, $P = 0.028$), and headache (14.1% vs. 0%, $P = 0.003$) were significantly higher in the 3HP group. Of the observed patients with adverse reactions that received 3HP, 88.24% (n = 30) had them resolved within the first two weeks.

Conclusion. The 3HP group had a higher completion rate and no loss to follow-up compared with 23% loss to follow-up in the 9H group, however, adverse reactions were significantly higher in the 3HP group. Closer weekly monitoring of the 3HP group could lend itself to capturing more adverse reactions, however, 88% of those adverse reactions resolved within the first two weeks of therapy. Liver function tests were not significantly different ($P = 0.2079$) between the two groups, and were mildly elevated. We conclude that three months of rifapentine plus isoniazid for the treatment of LTBI may be a favorable option over the traditional 9 months of isoniazid in certain populations.

Disclosures. **All authors:** No reported disclosures.

2114. Prevalence of Tuberculous Spondylodisciitis and Diagnostic Utility of Xpert MTB RIF

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Background. To understand the prevalence of TB spondylodisciitis and the diagnostic utility of Xpert MTB RIF test (Genexpert) in the diagnosis of TB spondylodisciitis as compared with a Composite Reference Standard (CRS) based on clinical, mycobacterial smear, culture, pathological, radiological findings and clinical follow up.

Methods. 69 patients with infective spondylodisciitis who underwent surgical or image guided tissue biopsy were evaluated during May 2014 to February 2017. Tuberculous spondylodisciiitis were classified as 'confirmed' if culture grew MTB, 'probable' if in the absence of positive AFB culture, clinical, radiological or pathological findings favor TB, 'possible' if all negative but response to ATT was noted.

Results. 36 patient had culture confirmed pyogenic spondylodisciitis; 17 cases were treated empirically though the tissue culture were negative as HPE was suggestive of pyogenic spondylodisciitis. 3 had non-infective etiology.

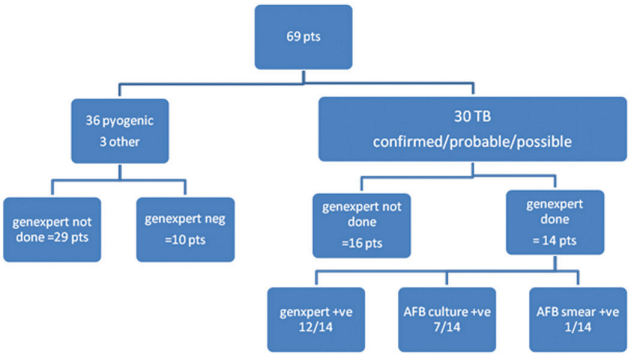
Among 30 who were treated as tuberculous spondylosdisciitis, in initial 16 patients genexpert was not done due to non-availability. Among these 16 patients, 1 had confirmed TB as the tissue grew MTB (MDR TB), 15 were treated as probable TB. All patients except one had good outcome. In the 14 patients treated as tuberculous spondylodisciitis in whom genexpert was done, 12 patients had positive genexpert as compared with 7 AFB culture positive patients. In two samples in which genexpert was negative, TB was confirmed by AFB culture and in another by HPE. All patients except one (who had underling lymphoma) improved with ATT. In all other 10 cases where genexpert was negative, the etiology was pyogenic.

Conclusion. Pyogenic spondylodisciitis is more prevalent than tuberculous spondylodisciits in this study. Genexpert in tissue from infective spondylodisciitis is more sensitive than AFB smear and culture in diagnosing tuberculous spondylodisciitis.

Table 1: Performance of Genexpert as compared with AFB culture

	genexpert +	genexpert -
Culture –	6	1
Culture +	6	1

Figure 1: Flow chart depicting distribution of cases and genexpert performance



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2115. Prevalence of Gene Mutations profiles by GenoType MTBDR*plus/sl* to First Line Antituberculosis Drugs and Clinical Characteristics in Drug Resistant Tuberculosis Patients Referred to the National Institute of Respiratory Diseases in Mexico City

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Background. Drug resistance tuberculosis, specially MDR and XDR are a big challenge for diagnosis and treatment. In Mexico the prevalence of MDR is between 3–5%, a number probably underestimated due to lack of diagnostic tests for susceptibility. The National Institute of Respiratory Diseases in Mexico City is the national referral center for MDR/XDR tuberculosis. In our country there is no data about the gene mutations involved in drug resistance to first line antituberculosis treatment nor the clinical characteristics that accompany these findings.

Objective: Evaluate the prevalence of genotyping profiles according to a line probe assay (LPA) in patients with drug resistance tuberculosis and their associated clinical characteristics

Methods. Retrospective cohort from 2010 to 2014 of *M. tuberculosis* isolates with any type of resistance to first line antituberculosis drugs identified by MGIT SIRE and in which GenoType MTBDRplus/sl were performed, we evaluate prevalence of genotyping profiles according to the LPA within the isolates and gather data from those with complete medical records to asses clinical characteristics.

Results. In 52 and 33 isolates phenotyping and genotyping MTBDRplus/sl respectively were performed, 41 resistant to Isoniazid INH with 75% genotypic concordance, 33 resistant to rifampicin RIF with 75.6% concordance, 14 to streptomycin SM with 23% concordance and 10 to ethambutol EMB with 100% concordance, 54% MDR tuberculosis. The genotyping profile for RIF was absence of probes rpoB Wild Type 8 (WT) 57.7%, WT 7 30.8% and presence of rpoB mutation 3 (MUT) 19.2%. For INH absence of InhA WT2 48.1% and InhA WT1 19.2%. For EMB absence of embB WT1 30.8% and for SM absence of rrs WT1 (19%). Absence of InhA WT1 was associated with female ($P = 0.01$) and DM2 ($P = 0.032$) patients, other clinical/biochemical characteristics and mortality was not different in patients with o without the genotypic profile for each drug. Cavitary disease by CT was more frequent in patients with WT probe absence in RIF and INH than those who did not have a LPA suggestive of resistance for this drugs.

Conclusion. Wild Type probe absense is the frequent finding in our isolates according to LPA in RIF, INH, EMB and SM, intrisic host factors and clinical characteristics seem not to be related to a particular resistant gene profile.

Disclosures. **All authors:** No reported disclosures.

2116. Resistance of Mycobacterium and Outcomes of Pulmonary Tuberculosis Depending on VNTR-Profile Among Different Age Groups of Patients in Ukraine

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Background. Ukraine is among the five countries with the highest burden of multiple drug-resistance tuberculosis (MDR TB). MDR TB has found in 22 % new cases of TB and in 56 % of retreated cases in Ukraine (WHO, 2015), and the elderlies among TB-affected persons are near 23%. The aim was to study the resistance of

Mycobacterium tuberculosis (Mtb) and outcomes of TB depending on Mtb strains' genotypes among different age groups of TB patients.

Methods. In 2015–2016, 115 clinical cases of severe first diagnosed TB were studied. Identification of Mtb strains was made by using VNTR-genotyping by ETR A-E loci. Resistance of Mtb to drugs was done according to WHO recommendations. There was found out the large cluster of identical strains among Beijing`s family with VNTR-profile 42435 – 53 (46 %). All the cases were divided into 4 groups: group 1 – young adults, Mtb Beijing profile 42435, $n = 29$, group 2 – elderly adults, Mtb Beijing profile 42435, $n = 24$, group 3 – young adults, non-42435 profile, $n = 29$, group 4 – elderly adults, non-42435 profile, $n = 33$. The outcomes were analyzed after continuation phase of treatment.

Results. Beijing strains with VNTR profile 42435 were primary resistant in 37,7 %, and they become secondary resistant after at least 6 month treatment in 50,9 %. In cases of Beijing 42435-profile, the clinical courses of TB were very severe, with episodes of hemoptysis/pulmonary bleeding, the outcomes were unfavorable – treatment success was just in 35,7 % of cases, fail – 33,9 %, lost to follow up – 15,2 % and 15,2% of patients died, with no difference depend on the patient`s age, $P < 0.05$. Another Mtb strains were primary resistant in 30.6%, and they become secondary resistant after at least 6 month treatment in 32.3% (group 3 – 46.6%, group 4 – 18.8%, $P < 0.01$). The clinical courses of TB in cases of non-42435 VNTR profile were severe, but without episodes of hemoptysis/pulmonary bleeding, the outcomes were much more favorable – treatment success was in 58.1 % of cases (group 3 – 40%, group 4 – 75.1%, $P < 0.05$), fail – 22.5 %, lost to follow-up – 11.3% (group 3 – 20%, group 4 – 3.1%, $P < 0,05$). 8,1% of patients died, with no difference depend on the patient`s age, $P < 0,05$.

Conclusion. Beijing strains with VNTR-profile 42435 are spread very fast in Ukraine and compose the cluster of virulent primary resistant strains, with severe clinical course and worst outcomes.

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2117. Gram-Negative Polymicrobial Bloodstream Infections and Clinical Decision Making with a Microarray Testing System

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Background. Molecular rapid diagnostic tests, such as the microarray-based Verigene Gram-Negative Blood Culture Test (BC-GN), when performed in conjunction with antimicrobial stewardship, are associated with improved clinical outcomes in bloodstream infections (BSIs). Optimal use of Verigene BC-GN to aid in clinical decision-making, however, can be hindered by a lack of confidence in results if patients have polymicrobial GN BSIs.

Methods. Blood culture data from patients tested by Verigene BC-GN from June 2015 – July 2016 from the Detroit Medical Center and University of Maryland Medical Center were retrospectively reviewed and evaluated for incidence of missed GNs in GN BSIs. Missed GNs entailed those not detected in the tested sample and those that grew in a separate complementary positive blood culture bottle collected but not tested using Verigene BC-GN. For blood culture sets with missed GNs, potential clinical significance was evaluated.

Results. A total of 1,003 sets of GN blood cultures were reviewed. Fifty-seven (5.6%) were determined to be polymicrobial GN BSIs by traditional microbiological culture methods. Verigene BC-GN did not identify one or more GNs in 37 cases (65% of polymicrobial GN BSIs; 3.7% of total GN BSIs.); 25 were missed by the probe in the tested culture and 12 where missed due to isolation in the complementary blood culture bottle that was not tested by Verigene BC-GN. While potentially inappropriate de-escalation of antibiotic therapy could have occurred in 18 (31.5%) of polymicrobial GN BSIs, this represented only 1.8% of total GN BSIs.

Conclusion. Current practices utilizing Verigene BC-GN can result in the omission of undetected GNs in over half of polymicrobial GN BSIs. These misses were a combination of technology and workflow limitations. The potential for inappropriate de-escalation of antibiotic therapy in the entire cohort, however, was infrequent (<2% of total cases).

Disclosures. **P. Lephart**, Nanosphere: Grant Investigator, Grant recipient; **J. K. Johnson**, Nanosphere: Grant Investigator, Grant recipient

2118. Rapid Direct Disc Diffusion Tests (RDDDT) Direct From Blood Cultures (BSI) with Gram-negative Bacilli (GNB) Coupled with Prompt Intervention is an Effective and Safe Antibiotics Stewardship Strategy

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Background. Early diagnosis of BSI and appropriate antimicrobials are crucial; additionally avoidance of overly broad antibiotics is important to curb the development of resistance. Rapid molecular approaches are costly and have spectrum limitations. In our prior pilot study simple phenotypic RDDDT provided accurate susceptibility data for GNB over 24 hours earlier than conventional methods. This follow up pilot study evaluated RDDDT plus prompt stewardship intervention to decrease the time to optimal antimicrobial therapy.

Methods. GNB positive blood cultures (BACTEC) were inoculated by expressed swab to MH agar plates. 12 antibiotic discs were applied. After at least 8 hr incubation, results in conjunction with MALDI-TOF speciation, were reported to EMR at 9am or 3pm. After review the ID Fellow contacted the primary MD to escalate, deescalate, or continue current antibiotics. Results of the RDDDT were compared with routine VITEK and assessed as complete agreement (CA) or as very major (VM), major (M), minor (MI) discrepancies. Times to susceptibility, RDDDT based antibiotic optimization, and VITEK reports were assessed. Time to VITEK based optimization was obtained from the prior baseline pilot study.

Results. 164 patients with GNB were evaluated. 1688 individual RDDDT readings, including 297 ESBL and 66 CRE were compared with VITEK. RDDDT had 85% CA and 0.4% VM, 2.3% M, 13% MI discrepancies. The median time from BC positivity to RDDDT report was 17.5 hours vs. 46 hours for VITEK. Of 164 patients, 162 were assessed clinically. Of those, 72 (44%) required antibiotic change with median time to optimization 21 hours based on RDDDT vs. 71 hours based on prior baseline VITEK.

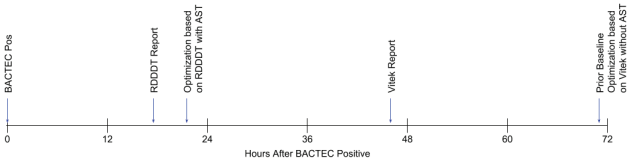
Conclusion. RDDDT coupled with prompt stewardship intervention provided a safe and reliable strategy to improve time to antibiotic optimization with savings of ~2 days compared with standard VITEK reporting. Furthermore, RDDDT is simple and applicable worldwide, especially in resource limited areas.

Accuracy: RDDDT vs. VITEK

Results	Total N (%)	Excluding Cefazolin N (%)
Discrepancies		
VM	6 (0.4)	6 (0.4)
M	39 (2.3)	31 (2)
MI	217 (13)	152 (10)
CA	1426 (85)	1349 (88)
Total	1688	1538

Intervention Based on RDDDT vs. VITEK

	RDDDT (%)	VITEK (%)
Escalation	25 (35)	16 (25)
De-escalation	47 (65)	47 (75)
Total	72 (100)	63 (100)



Disclosures. **All authors:** No reported disclosures.

2119. Clinical Impact of Expedited Pathogen Identification and Susceptibility Testing for Gram-negative Bacteremia and Candidemia Using the Accelerate Pheno™ System

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Background. Inappropriate initial antibiotic therapy (IIAT) for sepsis increases mortality. Fast diagnostic tests providing earlier identification (ID) of pathogens and antimicrobial susceptibility testing (AST) have the potential to improve mortality and antimicrobial stewardship. The Accelerate Pheno™ system (AXDX) is a newly FDA cleared fast diagnostic testing system that provides ID and AST for Gram-positive and Gram-negative bacteria (GNB) and ID for *Candida* bloodstream isolates.