reactions were having HIV infection (OR 7.99; 95% CI 3.73–17.10, $P < 0.001$), Age >60 years (OR 2.64; 95% CI 1.43–4.87, $P = 0.002$) and female sex (OR 1.97; 95% CI 1.11–3.52, $P = 0.02$).

Conclusion. There is a high TB treatment success rate among patients who have treated for TB, but adverse drug events in HIV co-infected TB patients is higher than that observed in non-HIV-infected patients.

Table 1 Clinical characteristics, investigations, and clinical outcomes between tuberculosis patients who with and without HIV coinfection

Factor	Total (N= 460)	HIV + (N= 49)	HIV neg (N= 411)	P value
Clinical Characteristic				
Median (IQR) age at time of TB diagnosis, years	44 (32.5- 61)	37 (32-46)	46 (33- 62)	<0.002
Gender				0.199
Male (%)	300 (65.2)	36 (73.5)	264 (64.2)	
Female (%)	160 (34.8)	13 (26.5)	147 (35.8)	
Median (IQR) body weight at time of TB diagnosis, kilograms	53 (48- 60)	53 (50-60)	53 (47-60)	0.734
Underlying DM (%)	66 (14.3)	5 (10.2)	61 (14.8)	0.381
Thai Nationality (%)	449 (97.6)	48 (97.9)	401 (97.6)	0.865
Median (IQR) CD4 cell count at TB diagnosis, cells/mm^3		134 (19-247)		
Median (IQR) CD4 cell count at TB diagnosis, %		8.97 (2.8-17.0)		
Tuberculosis Diagnosis				
Type of tuberculosis, n(%)				<0.001
Pulmonary tuberculosis	369(80.2)	29 (59.1)	340 (82.7)	
Smear positive pulmonary tuberculosis	208(45.2)	16 (32.6)	192 (46.7)	
Smear negative pulmonary tuberculosis	161(35)	13 (26.5)	148 (36.0)	
Disseminated tuberculosis	21(4.6)	11 (22.4)	10 (2.4)	
Extrapulmonary tuberculosis	70 (15.2)	9 (18.4)	61 (14.8)	
Chest Radiograph, n(%)	390			<0.001
Upper lobe	239(61.3)	15 (37.5)	224 (64)	
Lower lobe	53(13.6)	13 (32.5)	40 (11.4)	
Both upper lobe and lower lobe	83(21.3)	6 (15)	77 (22)	
Military Pattern	15(3.8)	6 (15)	9 (2.6)	
Microbiological confirmed (AFB/PCR), n (%)	213(46.3)	21 (42.9)	192 (46.7)	0.609
Treatment and outcome				
Treatment regimen, n (%) INH/Rifampicin/Ethambutol/Pyrazinamide	457 (99.3)	49 (100)	408 (99.3)	0.548
Median (IQR) time to ART initiation, days		29.5 (21- 48)		
Treatment outcome, n (%)				0.656
Treatment success	428 (93.0)	44 (89.8)	384 (93.4)	
Default	15 (3.3)	3 (6.1)	12 (2.9)	
Died	16 (3.5)	2 (4.1)	14 (3.4)	
On treatment	1(0.2)	0	1 (0.24)	
TB related death	14 (3.0)	2 (4.1)	12 (2.9)	0.568
Adverse event, n (%)				<0.001
No adverse event	387 (84.1)	27 (55.1)	360 (87.6)	
Drug induced liver injury	59(2.8)	19 (38.8)	40 (9.7)	
Rash	13 (2.8)	3 (6.1)	10 (2.4)	
Arthralgia	1(0.2)	0	1 (0.2)	

AFB; Acid fast bacilli, ART; antiretroviral therapy, IQR; Interquartile range, TB; Tuberculosis

Table 2 Factors associated with TB treatment success by univariate logistic regression

Factors	Odds ratio	95% confidence interval	P-value
Age, per 5 year	0.97	0.88-1.07	0.532
Female	1.99	0.84-4.70	0.118
Underlying Diabetes mellitus	0.39	0.17-0.89	0.025
Having HIV coinfection	0.62	0.23-1.68	0.349
CD4 cell count <50 cells/mm^3 at TB diagnosis	0.35	0.10-1.28	0.113
Pulmonary tuberculosis	0.35	0.08- 1.51	0.161
Extrapulmonary tuberculosis	2.83	0 .66- 12.13	0.161
Negative for microbiological study at diagnosis	5.58	2.25-13.84	<0.001
TB involving lower lobe	0.39	0 .18-0.84	0.015
Having side effect from anti tuberculosis drug	1.34	0 .46- 3.96	0.590

ART= antiretroviral therapy

Table 3 Factors associated with TB treatment success by multiple stepwise logistic regression

Factors	Odds ratio	95% confidence interval	P-value
Negative for microbiological study at diagnosis	4.966	1.85- 13.35	0.001
TB involving lower lobe	0.36	0 .17-0 .79	0.011

Table 4 Factors associated with Anti tuberculosis drug adverse reaction by univariate logistic regression

Factors	Odds ratio	95% confidence interval	P-value
Age > 60 year	1.68	0.99-2.85	0.052
Female	1.68	1.02-2.80	0.043
Underlying Diabetes mellitus	1.633	0.87-3.05	0.124
Having HIV coinfection	5.75	3.04-10.85	<0.001
CD4 cell count <50 cells/mm^3 at TB diagnosis	2.798	1.02-7.71	0.047
Pulmonary tuberculosis	1.55	0.71-3.39	0.273
Negative for microbiological study at diagnosis	0.866	0.52-1.43	0.574
TB involving lower lobe	1.94	1.14-3.33	0.015
Body weight, per 5 kilograms increasing	0.92	0.81-1.04	0.189

ART= antiretroviral therapy

Table 5 Factors associated with Anti tuberculosis drug adverse reaction by multiple stepwise logistic regression

Factors	Odds ratio	95% confidence interval	P-value
Age > 60 year	2.64	1.43-4.87	0.002
famale	1.97	1.11-3.52	0.02
Having HIV coinfection	7.99	3.73-17.10	<0.01

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

1343. Infectious Diseases Consultation Avoided Delayed Therapy and Unnecessary Exposures in the Majority of GeneXpert® MTB/RIF and AFB Smear Negative Pulmonary Tuberculosis Cases in the US County Hospital in Houston, Texas

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Background. In 2017, Harris County had a total of 281 cases of newly diagnosed tuberculosis (Mtb), which was the highest incidence in Texas, United States. Lyndon B. Johnson (LBJ) hospital is one of the two HarrisHealth county hospitals which serve a wide population including immigrants and an indigent population. GeneXpert® MTB/RIF (GeneXpert) was implemented in our hospital since 4/2016. However, pulmonary Mtb cases with negative GeneXpert/AFB smears carry significant challenges in the initiation of therapy and hospital infection control. Our aim was to describe how Infectious diseases (ID) consultations helped to identify the cases of both GeneXpert and AFB smear-negative pulmonary Mtb cases without delaying therapy and unnecessary exposures.

Methods. The patients with newly diagnosed pulmonary Mtb in LBJ hospital were identified between January 2017 and December 2018. The patient's characteristics, GeneXpert results, AFB smear results, and the presence of ID consultation were retrospectively collected. Delayed therapy is defined as the initiation of active four-drug Mtb therapy until the positive culture results.

Results. A total of 52 cases with newly diagnosed pulmonary Mtb confirmed by positive culture were identified, of which 44 cases who had GeneXpert on at least one sputum specimen were included in the final analysis. 7 out of 44 (20%) had negative GeneXpert on the first specimen and all three or more AFB smears were negative. The patients were the median age of 51 years and predominantly female (57%). 5 cases were Hispanic and 2 had HIV/AIDS. In 6 out of the 7 cases, ID consultation was made and anti-tuberculous therapy was empirically initiated without delay and all remained in the isolation. Only one case had delayed therapy despite ID consultation, three consecutive AFB sputum samples, and one GeneXpert was properly performed. The patient had newly diagnosed AIDS (CD4 of 2 cells/μL) and 3 weeks of chronic cough with normal lung parenchyma and minimal right pleural effusion on CT chest at his presentation.

Conclusion. We had 7 cases (20%) of GeneXpert and AFB smear-negative pulmonary Mtb. ID consultation properly identified 6 cases without delayed therapy. Early involvement of ID should be considered when pulmonary Mtb is suspected.

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

1344. Interferon Gamma Release Assay (IGRA) Responses in HIV-Infected and -Uninfected Women in Pregnancy

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Background. Pregnancy and HIV-associated immunologic changes may affect latent TB infection (LTBI) interferon-gamma release assay (IGRA) QuantiFERON TB Gold Plus (QFT-Plus) diagnostic performance.

Methods. In this ongoing study, HIV-infected and -uninfected women 20–34 weeks gestation without TB in the past year are enrolled from antenatal clinics in western Kenya and tested with QFT-Plus. Mean quantitative IFN- γ responses to mitogen, and *M. tuberculosis* antigens (TB1 [primarily CD4+] and TB2 [addition of CD8+ response]) were compared using two-sample t-tests. Proportions for categorical variables were compared using univariate logistic regression.

Results. Among 306 women (HIV+ 127 [41.5%], HIV− 179 [58.5%]) enrolled between January 2018 and March 2019, median maternal and gestational age were 25 years (IQR 21–28) and 28 weeks (IQR 24–32), respectively. Among HIV-infected women at enrollment, 99.2% were on ART, median CD4 count was 440 cells/mm^3 (IQR 235–703), 37.5% were virally suppressed, and 60.6% reported having received isoniazid preventive therapy (IPT). Overall, 95 (31.1%) women were QFT-Plus positive (HIV+ 38 [29.9%], HIV− 57 [31.8%], OR 0.90, 95% CI 0.54–1.48, P = 0.671); 190 (62.1%) were negative (HIV+ 81 [63.8%], HIV− 109 [60.9%]), and 21 had indeterminate results (HIV+ 8 [6.3%], HIV− 13 [7.3%], OR 0.83, 95% CI 0.33–2.09, P = 0.690). Mean response to mitogen was similar between HIV-infected and -uninfected women (6.0 vs. 6.1 IU/mL, P = 0.663]. Among QFT-Plus positive women, HIV+ women had significantly lower TB1 responses than HIV− women (HIV+ 2.7 vs. 4.2 IU/mL, P = 0.035). Mean TB2 responses had a similar pattern, but did not reach statistical significance (HIV+ 3.1 vs. 4.3 IU/mL, P = 0.107). Both TB1 and TB2 were positive for 82 women (86.3%), 4 women were only TB1 positive (4.2%), and 8 women were only TB2 positive (8.4%).

Conclusion. Among pregnant women, HIV-infection was not associated with increased prevalence of QFT+ responses. However, among QFT-positive women, TB1 responses were lower in HIV-positive women with a similar trend observed for TB2 responses. These findings suggest that HIV-associated immunologic changes may influence QFT test performance.

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1345. Randomized Control Trial to Evaluate the Clinical and Cytokine Response Profile to Oral Thalidomide in Leprosy Patients with Erythema Nodosum Leprosum

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Background. Leprosy is a chronic granulomatous disease caused by *Mycobacterium leprae*. Erythema Nodosum Leprosum is an acute inflammatory Type III hypersensitivity response during the chronic course of the disease process. This immune response manifests clinically as painful red nodules and systemic symptoms similar to sepsis with neutrophilic leukocytosis. Capsule Thalidomide is the drug of choice for treating this condition.

Methods. A randomized control study to study the immunological markers involved in the pathogenesis of erythema nododsum leprosum and its successful suppression by Thalidomide should provide newer insight into the pathogenesis of this disease process, provide better diagnostic and therapeutic options and better markers to predict prognosis. Based on the previous studies our aim was to find a correlation with tumor necrosis factor-a, interferon-gamma, and Cd-64 expression on activated circulating neutrophils during Type II lepra reaction and the successful response to capsule Thalidomide. Venous blood samples were collected from all the samples and after 7 days post thalidomide therapy, only in the treated population. All the patients with type II lepra reaction responded to Capsule Thalidomide clinically and all the skin lesions resolved in 7–14 days. Blood samples and skin biopsy was subjected to histopathology, immunofluorescence assay, immunohistochemical staining, quantitative RT–PCR (reverse transcriptase-polymerase chain reaction) and flow cytometry.

Results. Study found out that Interferon Γand Tumor necrosis factor-A are sensitive markers in diagnosing erythema nodosum leprosum and Cd-64 expression on activated circulating neutrophils is both a specific and sensitive marker. Cd-64 expression also had a positive correlation with Thalidomide treatment and clinical response.

Conclusion. Cd-64 expression on circulating neutrophils is a potential early biophysical marker for diagnosing erythema nodosum leprosum and can be used as a tool to assess thalidomide response. InterferonΓ and Tumor necrosis factorA are sensitive markers to screen for lepra reactions and this study showed no significant correlation with Thalidomide therapy.

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1346. Ruling out TB in New York City: Are Two NAATs (Nucleic Acid Amplification Testing) Enough?

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Background. Prompt diagnosis of pulmonary *Mycobacterium tuberculosis* (TB) infection can prevent nosocomial exposure. However, sputum smears are insensitive, and turnaround time for cultures can take weeks. Rapid diagnostics, such as nucleic acid amplification testing (NAAT), on respiratory specimens of patients suspected to have TB can improve diagnostic accuracy. Current practice at our institution is to obtain ≥ 3 NAATs in high-risk patients prior to discontinuing airborne isolation, but some studies have suggested that 2 negative NAATs may be sufficient. We conducted a retrospective study of patients at our institution diagnosed with TB.

Methods. The study was conducted at an academic adult hospital, an academic pediatric hospital, and a community hospital in New York City. Line lists of positive cultures for TB and positive NAATs from 2014 to mid-2018 were obtained from microbiology. Chart review was performed. Patient demographics, comorbidities, and radiographic findings were collected. Concordance between culture results and NAATs was evaluated. Incidence of inpatient TB exposure was noted.

Results. 82 cases of TB were found in the study period (see Figure 1). 45 cases were new inpatient diagnoses of pulmonary TB. The most common presenting symptoms were cough (69%), weight loss (49%), and fever (42%, see Table 1). 38/45 (84%) of patients were originally from a country other than the United States. 43/45 (96%) of patients had abnormal lung imaging. Cavitary disease was seen in 29%; other upper lobe disease was seen in 42%. Among smear-negative pulmonary TB cases, NAAT was positive in 11/16 (69%) of patients. Within this subgroup, the sensitivity of one NAAT was 41% when compared with culture. In smear-negative, NAAT-positive patients, NAATs were fully concordant with cultures in 4/11 patients (36%, see Table 2). The median number of positive NAATs was 1; the median number of positive cultures was 2. Five patients with pulmonary TB had negative NAATs altogether (median = 3); 2/5 resulted in TB exposure investigations after airborne precautions were discontinued following NAAT results. Overall, 13/45 (28%) of new diagnoses resulted in an exposure investigation.

Conclusion. Obtaining ≥ 3 NAATs in patients suspected of pulmonary TB improved diagnostic accuracy compared with obtaining 2 or fewer.

Symptoms at time of culture		
Fever	19/45	42.2%
Night sweats	9/45	20.0%
Weight Loss	22/45	48.9%
Cough	31/45	68.9%
Hemoptysis	6/45	13.3%
Comorbidities		
HIV	1/45	2.2%
Malignancy	2/45	4.4%
Solid organ transplant	2/45	4.4%
Other immunosuppressive disease	2/45	4.4%
Asthma or COPD	5/45	11.1%
Chronic Lung disease	6/45	13.3%
Chronic Liver disease	5/45	11.1%
Chronic Kidney disease or ESRD	4/45	8.9%

Table 1. Symptoms and comorbidities at the time of diagnosis in patients with pulmonary TB from 2014-2018.

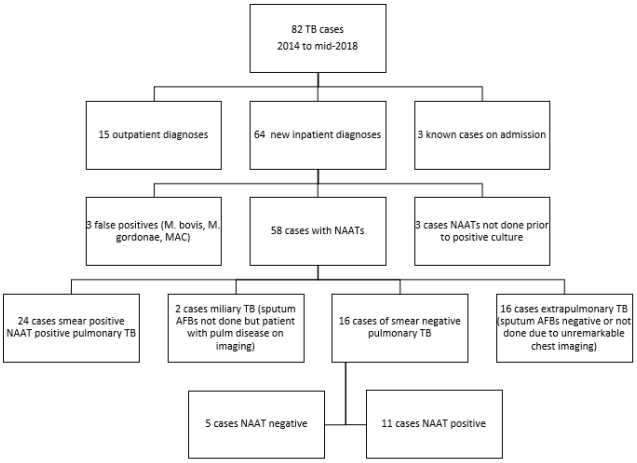

Figure 1. Flowchart of positive TB cultures from 2014-2018