

1662. The Prevalence of *M. tuberculosis* among Acid Fast Cultures from Military Health System Beneficiaries from Hawaii and Pacific Islands from January 2002 to November 2019

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Session: P-72. Tuberculosis and other Mycobacterial Infections

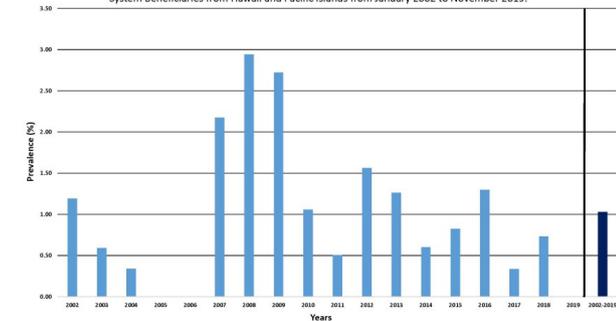
Background. Tuberculosis (TB), caused by *Mycobacterium tuberculosis* (MTB), is the leading infectious cause of death worldwide and the state of Hawaii (HI) has the second highest case rate of TB in the United States. The prevalence of TB among military health system (MHS) beneficiaries (active duty service members, retirees, dependents, civilians and eligible Pacific Island civilians) in HI has not been previously reported. Our analysis evaluates the prevalence of MTB among acid fast cultures (AFCs) tested at Tripler Army Medical Center (TAMC) on Oahu, HI and describes demographic factors associated with positive samples.

Methods. We analyzed AFC results from TAMC clinical diagnostic microbiology laboratory from January 2002 to November 2019. Demographic data were recorded for each individual with an AFC sample during the study period. Prevalence was calculated based on the number of MTB-positive AFCs per all AFCs over the study period. Multivariable logistic regression was used to evaluate associations between demographic factors and MTB-positive AFC results.

Results. From January 2002 to November 2019 there were 4768 AFCs resulted at TAMC with 49 MTB-positive AFC, leading to a cumulative prevalence of 1.03 percent (Figure 1). After controlling for other factors, Asian-Pacific Islanders had nearly 15 times higher odds of having a positive AFC than whites (OR=14.96, 95% CI 5.03, 44.55, p< 0.001) and active duty personnel had 2.6 times the odds of having a positive AFC than dependents, civilians and retirees (OR=2.6, 95% CI 0.94, 7.22, p=0.067).

Figure 1. The Prevalence of *M. tuberculosis* (MTB) among Acid Fast Cultures (AFC) from Military Health System Beneficiaries from Hawaii and Pacific Islands from January 2002 to November 2019.

Figure 1. The Prevalence of *M. tuberculosis* (MTB) among Acid Fast Cultures (AFC) from Military Health System Beneficiaries from Hawaii and Pacific Islands from January 2002 to November 2019.



Conclusion: The low prevalence of MTB among AFCs performed at our institution over nearly 16 years suggests that living in the state of HI does not appear to confer high rates of TB to MHS beneficiaries. Persons with Asian-Pacific Islander ethnicity have higher odds of positive AFC which corroborates prior studies regarding risk factors for MTB. Further analysis is needed to further define risk factors associated with positive AFC among MHS beneficiaries in HI. Follow-up analysis is underway to describe the clinical course of the persons with MTB-positive AFC from this study.

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1663. The Significance of Acid Fast Cultures in Peritoneal Dialysis-associated Infections: A Non-tuberculous Mycobacteria Case Series

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Session: P-72. Tuberculosis and other Mycobacterial Infections

Background. Non-tuberculosis mycobacteria (NTM) are a group of *Mycobacterium* that are defined as species other than *Mycobacterium tuberculosis* complex and *Mycobacterium leprae*. Rapid growing NTMs grow on culture media as early as 5-7 days. NTMs are considered a rare cause of peritoneal dialysis (PD) associated infections.

Methods. We highlight four cases of PD catheter associated infections due to rapid growing NTMs to convey the importance of these bacteria in the setting of PD associated infections.

Results. All of our cases all were on PD due to their end stage renal disease (ESRD). Case 1 is a 55-year-old man who was on PD due to IgA nephropathy. He had ulceration around catheter site and abdominal pain for 3 months prior to presentation. Catheter site and peritoneal fluid were both positive for *Mycobacterium abscessus*. Case 2 is a 59-year-old woman with who was on PD due to Alport syndrome. She presented with fever and pain around PD catheter site. Cultures were positive for *Mycobacterium fortuitum*. Case 3 is a 68-year-old woman who was on PD due to diabetic nephropathy. She presented after increased drainage around PD-catheter site

after 2 months duration. Cultures from catheter site grew *Mycobacterium porcinum*. Case 4 is a 73-year-old male with who was on PD due to diabetic nephropathy. He presented due to erythema around his PD catheter site. Catheter site cultures were positive for *M. abscessus*. Each case was treated based upon culture data and for varied length of time, which can be further seen in Table 1.

Table 1

Characteristics and Treatment of Cases						
Case	Age/Sex	Culture site(s)	Associated peritonitis?	Culture	Treatment	Duration
Case 1	55 M	-Peritoneal catheter site -Peritoneal fluid	Yes	<i>Mycobacterium abscessus</i>	-Oral azithromycin -Intravenous meropenem -Intravenous tigecycline	6 months
Case 2	59 F	-Peritoneal catheter site	No	<i>Mycobacterium fortuitum</i>	-Oral clarithromycin -Oral ciprofloxacin	8 months
Case 3	68 F	-Peritoneal catheter site	No	<i>Mycobacterium porcinum</i>	-Oral ciprofloxacin -Oral linezolid -Intravenous amikacin	Passed prior to completing treatment
Case 4	73 M	-Peritoneal catheter site	Yes	<i>Mycobacterium abscessus</i>	-Intravenous amikacin -Intravenous meropenem -Oral linezolid -Oral azithromycin	6 months

Conclusion. Typical organisms that cause peritonitis and PD exit site infections are from skin flora contamination. The International Society of Peritoneal Dialysis recommends anaerobic and aerobic cultures to be obtained in suspected peritonitis. Expected culture negative rate are typically about 10-20%. NTMs can be often missed and diagnosed as a culture negative infection if routine acid-fast bacilli (AFB) cultures are not obtained. Also, NTMs are likely to be under represented since these are not considered reportable. A high index of suspicion would mandate culturing for NTMs as a potential cause of PD catheter associated infection. With having 4 cases all in Florida, we would like to stress the importance of ordering AFB cultures in PD catheter associated infections.

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1664. The Utilization of Hospital Inpatient Care due to Tuberculosis, Republic of Ireland, 2015-2018

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Session: P-72. Tuberculosis and other Mycobacterial Infections

Background. The Republic of Ireland (ROI) is a low incidence TB country. The last reform of TB services in the ROI in 2003 recommended that most TB management should be delivered on an outpatient basis with 3 hospitals being designated as TB centres. Our aim was to describe the utilization of hospital inpatient care by patients with TB in the Republic of Ireland.

Methods. Hospital coding data were searched to identify TB hospital discharges between 01/01/2015-31/12/18. The projected cost of TB episodes of care was calculated using payment rules for public hospitals in Ireland.

Results. 1185 admissions with TB as the principal diagnosis were identified. 801/1185 (68%) episodes of care were emergencies and 384/1185 (32%) were elective. We estimate that 65.1% (818/1257) patients with TB notified in the Republic of Ireland from 2015-2018 had an episode of care in a public hospital and (50.8%) 639/818 had an emergency episode of care. We estimate that mean annual cost of TB inpatient care per year in the ROI from 2015-2018 was €2,638,828 - 2,955,047, with emergency episodes of care costing an average of €2,250,926 - 2,557,397 per year.

Conclusion. The burden of TB on hospital inpatient care in the Republic of Ireland is significant.

The national TB policy should change in recognition of this.

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1665. Using Electronic Health Records to Describe TB in Community Health Settings: a Cohort Analysis in a Large Safety-Net Population

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Session: P-72. Tuberculosis and other Mycobacterial Infections

Background. Over 80% of tuberculosis (TB) cases in the United States are attributed to reactivation of latent TB infection (LTBI). Eliminating TB in the United States requires expanding identification and treatment of LTBI. Centralized electronic health records (EHRs) are an unexplored data source to identify persons with LTBI. We explored EHR data to evaluate TB and LTBI screening and diagnoses within OCHIN, Inc., a U.S. practice-based research network with a high proportion of Federally Qualified Health Centers.

Methods. From the EHRs of patients who had an encounter at an OCHIN member clinic between January 1, 2012 and December 31, 2016, we extracted demographic variables, TB risk factors, TB screening tests, International Classification of Diseases (ICD) 9 and 10 codes, and treatment regimens. Based on test results, ICD

codes, and treatment regimens, we developed a novel algorithm to classify patient records into LTBI categories: definite, probable or possible. We used multivariable logistic regression, with a referent group of all cohort patients not classified as having LTBI or TB, to identify associations between TB risk factors and LTBI.

Results. Among 2,190,686 patients, 6.9% (n=151,195) had a TB screening test; among those, 8% tested positive. Non-U.S.-born or non-English-speaking persons comprised 24% of our cohort; 11% were tested for TB infection, and 14% had a positive test. Risk factors in the multivariable model significantly associated with being classified as having LTBI included preferring non-English language (adjusted odds ratio [aOR] 4.20, 95% confidence interval [CI] 4.09–4.32); non-Hispanic Asian (aOR 5.17, 95% CI 4.94–5.40), non-Hispanic black (aOR 3.02, 95% CI 2.91–3.13), or Native Hawaiian/other Pacific Islander (aOR 3.35, 95% CI 2.92–3.84) race; and HIV infection (aOR 3.09, 95% CI 2.84–3.35).

Conclusion. This study demonstrates the utility of EHR data for understanding TB screening practices and as an important data source that can be used to enhance public health surveillance of LTBI prevalence. Increasing screening among high-risk populations remains an important step toward eliminating TB in the United States. These results underscore the importance of offering TB screening in non-U.S.-born populations.

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1666. Yield of Tuberculosis Contact Tracing among Veterans after Outpatient Exposure

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Session: P-72. Tuberculosis and other Mycobacterial Infections

Background. Tuberculosis contact tracing (TBCT) is essential to detecting transmission. High priority contacts for TBCT include children less than 5 and those with prolonged, close contact with a tuberculosis (TB) case. Other populations considered high priority include those with certain comorbidities. While data are limited, there is evidence for transmission in outpatient settings with short duration/casual contact. We describe the yield of TBCT among a high priority cohort after exposure in to active TB in VA clinics.

Methods. Between 2016-2019, VA Northern California performed 4 episodes of TBCT in the outpatient setting. In TBCT 1, the index case was an AFB smear positive healthcare worker (HCW) with 30-minute patient appointments. In TBCT 2-4, the index cases were patients, 2 of whom were AFB smear positive. TBCT included patients seen by the HCW (TBCT 1) and those with appointments one hour before or after the index patient in the same clinic (TBCT 2-4). Contacts were offered interferon-gamma release-assay (IGRA). Staff contacts were tested by purified protein derivative (PPD). Comorbidities, prevalent and new cases with positive TB testing were calculated and compared between different groups.

Results. Fifty-one percent of veteran contacts had comorbidities placing them in a high priority group for TBCT. Among the 593 patients who had an IGRA during TBCT, 40 (6.7%) tested positive. Twenty-six (4.4%) had no known history of prior positive TB test of whom 6 reported a previous TB exposure history. Veterans exposed to the HCW did not have a higher prevalence of IGRA positivity or a new positive IGRA compared to TBCT 2-4 (5.5% vs 8.0%, p-value 0.22 and 3.4% vs. 5.3%, p-value 0.26). Among the 130 staff tested in TBCT 1-4, one (0.7%) converted during TBCT 1.

Conclusion. After extensive TBCT, the prevalence of latent TB among short duration/casual contacts of TB was 6.7%, similar to the baseline prevalence of latent TB of 6% in California. In this high priority population for TBCT, no difference was seen when there was face-to-face contact versus a shared waiting room with the index case. Staff conversion rate was extremely low. While decisions to perform TBCT in outpatient settings need to be individualized, the yield of TBCT in this population of veterans was low.

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1667. Change in characteristics of community-onset ciprofloxacin-resistant *E. coli* isolates causing community-acquired acute pyelonephritis in South Korea

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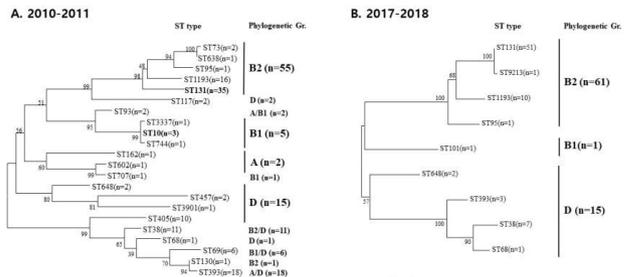
Session: P-73. UTIs

Background. The aim of this study was to examine the change in characteristics of community-onset ciprofloxacin-resistant (CIP-R) *E. coli* isolates causing community-acquired acute pyelonephritis (CA-APN) in South Korea between 2010-2011 and 2017-2018.

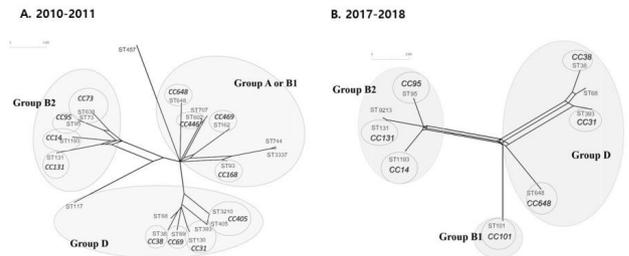
Methods. *E. coli* samples isolated from the blood or urine were collected from patients with CA-APN aged 19 years and more who were admitted to 8 Korean hospitals from September 2017 to August 2018, respectively. One isolate was collected from each patient. Phylogenetic typing, multilocus sequence typing (MLST), and molecular characterization of β -lactamase resistance and plasmid-mediated quinolone resistance (PMQR) determinants were performed. The data were compared with those from the previous study with same design in 2010-2011.

Results. A total of 346 and 300 isolates were collected during 2017-2018 and 2010-2011, respectively. Among them, 76 (22.0%) and 77 (25.7%) were CIP-R isolates. Significantly higher antimicrobial resistance against ampicillin (75.7% vs. 100%, $P < 0.001$) and cefotaxime (23.9% vs. 77.9%, $P < 0.001$) were observed for isolates in 2017-2018 compared to those in 2010-2011. The proportion of phylogenetic group B2 had increased significantly (44.7% vs. 79.2%, $P < 0.001$). As for MLST, the proportion of ST131 (27.6% vs. 66.2%, $P < 0.001$) had increased while that of ST393 (18.4% vs. 3.9%, $P = 0.004$) had decreased significantly. Higher proportion of CIP-R *E. coli* isolates in 2017-2018 had extended-spectrum β -lactamase (ESBL)/plasmid-mediated AmpC β -lactamase (PABL) (23.7% vs. 79.2%, $P < 0.001$) and PMQR determinant (11.8% vs. 40.8%, $P < 0.001$) compared to those in 2010-2011.

Phylogenetic tree



Analyzed by SplitsTree



Conclusion: Among uropathogenic CIP-R *E. coli* isolates in South Korea, ST131 predominance had become more prominent and the proportion of containing ESBL/PABL and/or PMQR determinants had increased.

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1668. Clinical Risk Score Model for Predicting Extended Spectrum Beta Lactamase (ESBL)-Positive Urinary Tract Infection among Hospitalized Filipino Patients: a Retrospective Single-Center Study

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Session: P-73. UTIs

Background. Infections caused by Extended-Spectrum B-lactamases (ESBL) organisms are an emerging health concern worldwide. In the background of progressive rise of antibiotic resistant organisms, efforts should be started to minimize