



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

### 2261. High-risk Behavior Among U.S. Military HIV-Infected Active-Duty and Retired Personnel

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**Session:** 248. HIV: Sexually Transmitted Infections  
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**Background.** Despite a high incidence of sexually transmitted infections (STIs), sexual behavior among U.S. military personnel remains understudied. Since 2014, the U.S. Military HIV Natural History Study has administered a behavioral questionnaire to a cohort of HIV-infected active-duty (AD) and retired personnel (RP). We compared patterns of risk behavior between AD and RP.

**Methods.** Male participants who completed a behavioral questionnaire ( $n = 1,465$ ) were included in this study. Chi-square and stepwise logistic regression were used to compare AD with RP. Our model included all behavioral variables listed below with adjustment for age and race. We assumed *a priori* that duty status would be correlated with age and selected the former as our variable of interest, hypothesizing that AD would engage in a higher number of risk behaviors.

**Results.** Selected demographics and behavioral data are summarized below.

	AD ( $n = 731$ ) %	RP ( $n = 734$ ) %	Univariate Odds (95% CI)	Multivariate Odds (95% CI)
<b>Demographics</b>				
Median Age (IQR)	30 (26,37)	51 (46,57)		
<b>Race</b>				
--White	32.7	45.0		
--Black	46.1	43.6		
--Hispanic/Other	21.2	11.4		
<b>Behavioral Data</b>				
Consumed > 6 drinks on a single occasion (past year)	50.9	32.1	2.2 (1.7,2.8)	
Ever experienced injury from drinking	84.5	72.9	2.0 (1.6,2.6)	
Ever used hard drugs	7.3	17.6	0.4 (0.3,0.5)	0.5 (0.3,0.9)
High self-perceived risk for STI	22.1	19.1	1.3 (1.0,1.6)	
> 2 new sexual partners in past three months	22.6	14.5	1.7 (1.3,2.3)	
Ever had sex with woman	65.9	82.8	0.4 (0.3,0.5)	
Ever had sex with man	82.1	79.8	1.2 (0.9,1.5)	
Condomless anal intercourse in last 3 mos (casual partner)	29.5	27.2	1.1 (0.8,1.5)	
Condomless anal intercourse in last 3 mos (anonymous partner)	22.3	18.2	1.3 (0.9,1.8)	

AD had significantly ( $P < 0.01$ ) higher rates of gonorrhea (6.4) and chlamydia (6.0) per 100 person-years (py) than RP (2.2 and 1.6, respectively); syphilis rates did not differ between the groups (AD 1.2/100 py; RP 1.3/100 py).

**Conclusion.** In contrast with our hypothesis, we found a high prevalence of sexual risk behavior among both AD and RP, and only lifetime use of hard drugs was independently associated with duty status. Despite high STI rates, ~20% in either group reported high self-perceived risk for STIs and/or recent condomless sex with an anonymous partner. Our findings demonstrate a need for intensive STI screening and counseling among HIV-infected military personnel in multiple career stages.

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### 2262. Extrapulmonary Nontuberculous Mycobacterial Infections in Southern Arizona

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**Session:** 249. Non-Tuberculous Mycobacteria - Epidemiology and Management  
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**Background.** Nontuberculous mycobacteria (NTM) are a diverse group of environmental mycobacteria which cause a wide range of pathology, from lung disease to skin and soft tissue (SST) infections and disseminated disease, mostly in immunocompromised individuals. The antimicrobial susceptibility is variable with high rates of resistance for some subspecies. Distinction between pathogenic and non pathogenic isolates is often difficult.

**Methods.** We conducted a retrospective review of medical records of patients older than 18 who had an NTM isolated in specimens other than lung, sputum, bronchial lavage, pleural fluid/tissue, between January 2012 and December 2016 at Banner University Medical Center Tucson, Arizona.

**Results.** We identified a total of 33 patients meeting our inclusion criteria. Most common sources were SST in 9 cases (27%), bone and joint in 9 (27%), followed by stool -5/33 (15%), blood -4 (12%), sinus 4 (12%) and disseminated (blood and bone marrow) in 1 case and brain tissue in 1 case. The predominant isolates were *Mycobacterium (M.) chelonae*- 6/33 (18%), *M. avium* complex- 5/33 (15%), *M. abscessus* - 5/33 (15%). None of the stool and sinus isolates were considered pathogenic and treated. Most common presentation was fever 7/33 (21%) and skin rash 7/33 (21%). Only 13/33 (39%) patients received specific treatment for the NTM (SST infection 5/9, bone and joint 3/9, blood 3/4, disseminated 1/1, brain tissue 1/1). Of the 13 treated infections, 9 (70%) were foreign body associated; the hardware was removed in all cases except 2 (1 blood isolate associated with prosthetic valve endocarditis and 1 brain tissue). Susceptibilities were available for 19 isolates. All *M. abscessus* were resistant to at least 4 drugs but none were resistant to amikacin. For the rapid growers, no standard starting treatment was identified. No pattern of laboratory abnormalities (WBC, hemoglobin, AST, alk phos, ESR, CRP) could be identified.

**Conclusion.** Our study shows that extrapulmonary NTM infections remain rare. There was no correlation between the NTM species and clinical significance or severity of disease. Furthermore, in the absence of specific clinical or laboratory features, the decision to treat is largely based on clinical judgment.

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### 2263. Disseminated *Mycobacterium hemophilum* Presenting as Leprosy-like Cutaneous Lesions in an Immunocompromised Host

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**Background.** *Mycobacterium hemophilum* is a slow growing non-tuberculous mycobacterium that has predilection for lower temperatures and extremities. It presents commonly as a cutaneous infection but can have a variety of clinical presentations in immunocompromised patients.

**Methods.** We present a patient found to have disseminated *Mycobacterium hemophilum* infection with a presentation similar to lepromatous leprosy.

**Results.** A 60 year-old man with a history of psoriasisiform dermatitis and end stage renal disease. He received a deceased donor renal transplant in 2005 from China, complicated by chronic allograft dysfunction. He previously worked as an architect and apart from travel to China in 2005 did not travel to other leprosy endemic regions nor have contact with patients known to have leprosy. Despite medical therapy, he was reintiated on dialysis 11 years after transplantation via a permanent catheter. He was on prednisolone, ciclosporin and MMF that ceased at time of reinitiation of dialysis.

He presented 4 months later with bilateral foot gangrene and an erythematous macular rash over his face and right upper limb. This was deemed to be drug related initially and he was treated with topical agents. His rash worsened with new nodular lesions over his chest, torso and lower limbs with facial and ear lobe involvement. He was also noted to have flattening of his nasal bridge that appeared saddle like. He was also noted to have wasting of bilateral intrinsic muscles of his hands with a right ulnar claw. This was thought to be in keeping with lepromatous leprosy. He underwent a skin biopsy that showed numerous acid fast bacilli with no formed granulomas. This grew *Mycobacterium hemophilum* and PCR for *Mycobacterium leprae* was negative. Nasal swabs and blood cultures also grew *Mycobacterium hemophilum*. Tissue cultures from his foot gangrene also grew *Mycobacterium hemophilum*. He was started on rifampicin, ciprofloxacin and

clarithromycin. Despite medical therapy, he demised a month later from hospital acquired pneumonia.

**Conclusion.** *Mycobacterium hemophilum* can present with cutaneous lesions and neurological signs that can resemble lepromatous leprosy. High index of suspicion, good travel and exposure history, as well as obtaining specimens for culture would be essential in suspicion and diagnosis.

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#### 2264. Tuberculosis and Leprosy Co-Infection: A Perspective on Diagnosis and Treatment

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**Session:** 249. Non-Tuberculous Mycobacteria - Epidemiology and Management  
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**Background.** The Marshall Islands are known to be endemic for both leprosy and tuberculosis (TB). Active TB needs to be ruled out in all cases of leprosy, as treatment will lead to rifampin monotherapy of undiagnosed TB co-infection. The use of protein based interferon gamma release assays (IGRAS) to test for latent TB in leprosy endemic areas is confounded by the crossreactivity of T-cell response to the antigenic homologs of these proteins in *Mycobacterium leprae*.

**Methods.** The Purified Protein Derivative (PPD) skin test may have some utility in the diagnosis of latent TB in the setting of paucibacillary leprosy, however "giant reactions" to PPD testing have been documented in mono-infection with multibacillary leprosy.

**Results.** A 32-year-old Marshallese woman presented to the surgical department with symptoms concerning for osteomyelitis of the third distal phalanx, multiple burn wounds on both hands, and hypoaesthetic- hypopigmented skin lesions. She was referred to the National Hansen's institute where a limited disarticulation of the distal phalanx and a slit skin biopsy was performed. Fite stain was negative, but PCR was positive for *Mycobacterium leprae*. The patient also had a strongly positive IGRA test for TB, and a positive PPD skin test. A chest x-ray showed a subtle infiltrate in the right middle lobe, three induced sputa were AFB negative by smear - however 1/3 was culture positive for drug-susceptible TB. The patient then underwent standard drug therapy for TB with the addition of dapsone for the treatment of Hansen's. Repeat sputum cultures were negative at one month, and the patient had improvement in her skin hypopigmentation within four months of therapy.

**Conclusion.** The immunological milieu of the host appears to paradoxically influence susceptibility to mycobacterial coinfection, with no consensus regarding whether prior exposure to one offers protection or predisposition to the other. The clinical implications of failure to identify active TB in a case of leprosy can not be understated, and positive IGRA or PPD testing in leprosy should not be considered falsely positive without further investigation. If treatment for paucibacillary leprosy is to be considered before ruling out active TB then minocycline may temporarily replace Rifampin.

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#### 2265. The Epidemiology of Non-tuberculous Mycobacteria (NTM) from Non-pulmonary Sites over 4 Years in Nebraska

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**Session:** 249. Non-Tuberculous Mycobacteria - Epidemiology and Management  
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**Background.** The recent outbreak of *M. chimaera* has focused attention on NTM species as the potential source of other clusters of infection. Since 2010 NTMs have been reportable in Nebraska.

**Methods.** The NEDSS data base for Nebraska was searched for all NTM infections reported from May 1, 2013 through April 30, 2017. These entries were reviewed for species or group type and source of material. All pulmonary isolates were excluded.

**Results.** Over 4 years, 421 lab reports of NTMs from non-pulmonary sites were received by the DPH. The most common group isolated was *M. avium intracellulare* group consisting of 246 specimens. Next was *M. chelonae* with 57 specimens, followed

by *M. fortuitum* with 32, and *M. abscessus* and *M. goodii* with 17 each. Three or fewer isolates of *M. kansasii*, *M. marinum*, *M. mucogenicum* or *M. arupense* were reported. Eight isolates were not speciated. The sources of those isolates were included in the report 46% of the time.

Source	MAI	<i>M. abscessus</i>			
		<i>M. chelonae</i>	<i>M. fortuitum</i>	<i>M. fortuitum</i>	<i>M. goodii</i>
Source Reported	40%	63%	50%	71%	94%
% of those cases reported by site					
Abscess, wound	26%	14%	25%	33.3% (1 ear)	19%
Tissue, mass, skin, or lesion	22	11 (1 sinus)	0	0	12.5
Neck or LN	12	11	0	0	0
Bone or Joint	11	14	19	0	25
Blood	3	22	25	25	0
Fluid Non Specified	24	5.5	12.5	16.7	12.5
Abdomen	0	11	6	0	12.5
Peritoneal fluid	0	3	0	8.3	0
Stool	0	14	6	8.3	
CSF	2	0	0	0	0
Other		Urine-3 Eye-5.5		Cervix-8.3	Urine 12.5

**Conclusion.** The majority of NTM reported in Nebraska over 4 years came from an abscess, wound, mass, bone, joint or skin source. Interesting results included: the number of cases detected by blood culture (between 15 and 20%) in non-MAI NTMs, the number of abdominal sources or stool (5-10% each) in non-MAI NTM, and the unusual sites discovered such as the CSF (MAI only), peritoneal fluid, ear, eye, and cervix. These results suggest that looking for NTM in the blood or stool could be an effective way of making the diagnosis, that it is important to consider NTM in abdominal infections and infections of peritoneal dialysis fluid of unclear etiology. Lastly, NTM may play a role in infections in unusual sites such as the eye, the ear or cervix.

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#### 2266. Septic Olecranon Bursitis caused by Non-tuberculous Mycobacteria, the Mayo Clinic Experience

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**Session:** 249. Non-Tuberculous Mycobacteria - Epidemiology and Management  
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**Background.** Non-tuberculous mycobacteria (NTM) are a rare cause of septic olecranon bursitis (SOB) with few cases reported in the literature. Here we describe clinical outcomes and treatment modalities of 6 patients with SOB due to NTM infections.

**Methods.** This is a retrospective chart review of all adult patients treated at Mayo Clinic between January 2000 and June 2015 with SOB due to NTM.

**Results.** We had 6 patients in our series. Patient characteristics are in Table 1. All patients receiving antibiotics ( $n = 5$ ) required  $\geq 12$  weeks of therapy. 80% experienced severe side effects requiring either a change in regimen ( $n = 3$ ) or discontinuation ( $n = 1$ ). The most serious side effect was vestibular toxicity and hearing loss related to tobramycin usage. One patient did not receive antibiotics after surgical debridement and had resolution. Of the 5 patients who required debridement, none experienced complications from surgery. Anconeus muscle flap was required in 1 patient to avoid wound healing issues. All 6 patients achieved resolution of infection at the bursa, but relapse with the same organism at other sites was seen in 2 immunocompromised hosts.

**Conclusion.** SOB due to NTM infections are uncommon and challenging to treat. In our institution, *Mycobacterium chelonae* was the most frequently implicated organism. Proper microbiologic diagnosis is often delayed. These typically require extensive debridement and prolonged combination antimicrobial therapy. In some instances, more conservative measures may be considered. Although side effects are common, this treatment modality seems to produce clinical improvement. Relapse may be associated with immunosuppression and may occur at different sites.