Epidemiological Patterns in Cutaneous Non-Tuberculous Mycobacterial Infections

Peter Mattei¹, Sean Chen¹, Seema Nayak², Ginette A. Hinds¹

¹ Department of Dermatology, Johns Hopkins School of Medicine, Baltimore, MD
² Department of Infectious Disease, Johns Hopkins School of Medicine, Baltimore, MD
Disclosures

- None
Overview

• Brief Review of Cutaneous Non-Tuberculous Mycobacterial (NTM) Infections

• Review of Our Study

• Conclusions and Future Directions for Investigation
Patterns of Cutaneous Infection

- **Species Specific**
  - *Mycobacterium ulcerans*
  - *Mycobacterium marinum*
- **Lymphocutaneous/sporotrichoid**
- **Cervical Lymphadenitis**
- **Folliculitis/Furunculosis**
- **Wound/Surgery/Procedure related**
- **Dissemination to cutaneous and/or mucosal sites**
Mycobacterium ulcerans

Mycobacterium marinum

Cervical Lymphadenitis

Folliculitis/Furunculosis

Objective

• Determine NTM species and as well as epidemiologically related risk factors

• Retrospective chart review of patients with cutaneous NTM infections seen at JHH dermatology and infectious disease clinics from 2011-2013.
Methods

• The Johns Hopkins Microbiology mycobacteria lab positive culture log book was reviewed for NTM infections.
• Data was available from January 2011 through November 2013.
• Medical records correlating with the positive culture log were reviewed retrospectively.
Results

• 23 positive NTM infections which involved the skin or subcutaneous tissues/lymphatics were identified.
• The mean age of infected individuals was 45 and the median age was 50.
• 15 of 23 of the infected patients were male.
• In addition, 17 of 23 patients were white, 3 of 23 were black, 1 of 23 was Hispanic and 2 of 23 were listed as “other.”
Results

• 6 of the 23 patients were on chronic immunosuppressive therapy and 2 of 23 were HIV-positive.

• 10 of 23 cases presented as cellulitis, 1 of 23 as panniculitis, 6 of 23 as abscess, 4 of 23 as lymphadenitis, and 2 of 23 as ophthalmic infection.
Results

Infection Sites
Results

- Exposure history was elicited from 18 of 23 records
- 10 of 18 involved history of a surgical procedure; 2 involved plastic surgery in a foreign country (DR and Peru)
- 4 of 18 involved exposure to salt water
Results
Results
Results

Species

- m. chelonaee: 5
- m. gordonae: 3
- m. fortuitum: 1
- m. marinum: 1
- m. abscessus: 3
- MAI: 8
Results

• All 3 cases of *M. marinum*, were associated with salt water exposure
• 4 of 5 cases of MAI presented as lymphadenitis
• 3 pediatric cases identified, all 3 MAI lymphadenitis presenting at 2 years of age.
Limitations

• Data obtained from a single medical center and may not be representative of other geographic locations.

• Relatively few cases were identified.
Conclusions

- NTM infections are relatively rare.
- Surgical procedures and salt water exposure are important risk factors for infection.
- Extremities were most frequently affected in this series.
- Pediatric infections identified in this series, involved MAI lymphadenitis.
Future Directions

• Currently working to obtain data from 10 years prior to this study

• Antimicrobial resistance patterns

• Compare and contrast infections by species and temporally