Faculty Disclosure

Leopoldo N. Segal, MD, MS

Relevant financial relationships with a commercial interest:

No relevant commercial interests.
Cough and Sputum Production

Structural Damage of the Lung

Decline in Lung Function

Diagnosis

F/U and Prognosis

Treatment

NYU LANGONE NTM/Bronchiectasis Multidisciplinary Program

Biomarker Research
- Diagnosis
- Translational
- Pathophysiology

Microbiology

Radiology and Imaging

Gastroenterology
- Swallowing and ENT

Rehabilitation Medicine:
- Physical and Occupational Therapy

Outcome Research
- Prospective Evaluation
- Clinical Trials

NYU School of Medicine
Understanding the microbiome among us and within us

Microbe Isolation

Microbial Product Identification

Culture Dependent

Culture Independent
Evaluation of the Airway Microbiome In NTM

Host Defense

Disease    Health
Microbial environment: e.g. Biofilm

Microbial Dynamics:
- GERD
- Impaired clearance

Host Defense

Disease

Health
Evaluation of the Airway Microbiome In NTM

NYU Langone NTM/Bronchiectasis Program

Respiratory Symptoms + Imaging abnormalities

Biomarker Cohort (n=200)

Questionnaires
Pulmonary Function
Clinical
Induced Sputum
Oral Wash

NTM +

NTM -

Case Control Sub-Study (n=40)

NTM +

NTM -

Bronchoscopy
Are there differences in airway microbiota between NTM+ and NTM-?

Oral Samples

Sputum Samples

PC1 (37%)

PC1 (42%)

PC1 (22%)

PC1 (21%)

NTM+

NTM-

NTM+

NTM-
Permissive Microbiota

Host Defense

Disease  Health

Suppressive Microbiota

Host Defense

Disease  Health
Outcomes of Patients Treated and Not Treated for Nontuberculous Mycobacteria

NYU NTM/Bronchiectasis Cohort

- Questionnaire
- Clinical and PFT
- Imaging
- Upper Airway and Swallowing Evaluation

<table>
<thead>
<tr>
<th>Year</th>
<th>Treatment A</th>
<th>Treatment B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>14% Cough, 86% No Cough</td>
<td>14% Cough, 86% No Cough</td>
</tr>
<tr>
<td>Three Months</td>
<td>12% Cough, 88% No Cough</td>
<td>12% Cough, 88% No Cough</td>
</tr>
<tr>
<td>Six Months</td>
<td>10% Cough, 90% No Cough</td>
<td>10% Cough, 90% No Cough</td>
</tr>
<tr>
<td>Nine Months</td>
<td>8% Cough, 92% No Cough</td>
<td>8% Cough, 92% No Cough</td>
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<tr>
<td>Year 1</td>
<td>6% Cough, 94% No Cough</td>
<td>6% Cough, 94% No Cough</td>
</tr>
<tr>
<td>Year 1.5</td>
<td>4% Cough, 96% No Cough</td>
<td>4% Cough, 96% No Cough</td>
</tr>
<tr>
<td>Year 2</td>
<td>2% Cough, 98% No Cough</td>
<td>2% Cough, 98% No Cough</td>
</tr>
</tbody>
</table>

Subjects Per Visit:
- Treatment A: 38, 16, 17, 10, 13, 10, 13
- Treatment B: 39, 45, 28, 29, 30, 25, 27
NYU NTM/Bronchiectasis Cohort

- Non-Pharmacologic
- Pharmacologic = Clinical Trials
  - Liposomal Amikacin for refractory MAC
  - Clofazamine for Recalcitrant NTM/M. Abscessus
  - Liposomal Ciprofloxacin for *Pseudomonas*
Be involved!! Ask us about research opportunities

NYU NTM/Bronchiectasis Program

- Pulmonary
  - Biomarker Research
    - Diagnosis
    - Translational
    - Pathophysiology
- Pharmacotherapy
- Gastroenterology
  - Swallowing and ENT
- Radiology and Imaging
- Microbiology
- Outcome Research
  - Prospective Evaluation
  - Clinical Trials
- Rehabilitation Medicine:
  - Physical and Occupational Therapy

NYU LANGONE
NTM/Bronchiectasis
Multidisciplinary Program
Be involved!! Ask us about research opportunities

NYU NTM/Bronchiectasis Program

Stephanie Lau, MD  
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Imran Sulaiman, MS  
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Will Wassmer

Yonghua Li, MD  
(Research Assistant/Lab)

Sara Chambers  
(Development)

Kathryn Norris, MS  
(Research Coordinator/IRB)
Be involved!! Ask us about research opportunities

NYU Langone NTM/Bronchiectasis Program

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Beatrice Ifshin, NTM Info & Research
Mona Wandler
Karen Elliott House
Leeam Lowin
Sandra Pearl

For more information about the program or opportunities for involvement, please contact Sara Chambers at sara.chambers@nyumc.org or 212-404-3538.

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