A Typical Case of Atypical Mycobacteria?
Immune eval

- 2 yo boy
- Chronic failure to thrive
- Recurrent illnesses
- Recent pneumonia (admitted to St Elsewhere)
- Referred for immune eval
In clinic

• Small but well appearing

• Basic eval

• IgG, IgA, IgM wnl

• Vaccine responses ok

• After visit, febrile and diarrhea over weekend
Admission

• Looks well, not dehydrated GI sx improved

• No resp symptoms

• Plan - workup FUO
  • Related to possible imm def?
  • Recent pneumonia?
  • GI illness?
Workup

- FUO stuff already ordered
- Working diagnosis now "necrotising pneumonia"
- Ceftriaxone, clindamycin
• Quantiferon failed, positive control negative

• PPD placed....13mm!

• Gastric aspirates x3.
TB or not TB

- Home on 4 drug therapy
- 2 of 3 gastric aspirates grew...
- Mycobacterium avium
Real?

• Is chest disease TB with "contaminated" GA?
• Is chest disease MAC with immune def?
• Treatment?
• Febrile for about 10 days at home
Outpatient

- Azithromycin, Rifampin, Ethambutal
- Immune evaluation at Boston (unrevealing)
- Sensitivities...
His M. avium Sensi's

- Sensitive to clarithromycin
- Resistant to rifampin
- Resistant to ethambutol
- ....but SENSITIVE to rifampin/ethambutol together
More story

- Ongoing fevers - CXR shows infiltrate back
- CT shows peri-bronchial adenopathy
- Treated with oral steroids - fevers improved
Atypical Mycobacteria

- Also called Non-Tuberculous Mycobacteria (NTM)

- Several species, environmental, ubiquitous

- **M. Ulcerans** - Buruli Ulcer

- **M. Marinum** - water, fish tanks

- **M. Abscessus** - skin, lung infections

- **M. Avium/Intracellulare** - pulmonary, disseminated, meningitis

- **M. Kansasii** - pulmonary, systemic, skin
Typical Presentations

• In immunocompetant hosts
  • Adenopathy (localized, esp cervical)
  • False positive PPD (ie without TB)
  • Skin infections - post-trauma
Atypical Presentations

- In immunocompromised hosts
  - Pneumonia - Lady Windermere Syndrome
  - Meningitis (rare, usually fatal)
  - Disseminated disease - fever, multi-system
  - Widespread adenopathy
M. avium Pneumonia

- 373 high-risk patients evaluated for PCP
- 136/519 specimens PCP
- 10 specimens (9 pts) had TB
- 63 specimens were NTM
M. avium Pneumonia

- Also associated with anatomical abnormalities
- Pulmonary sequestration
- COPD in adults
- Right middle, left lingula lobes.
- Also upper lobes (similar to TB)
- Asymptotic, transient, "colonization?"
In unusual/atypical pneumonias

- Invasive specimens (often sputum unhelpful, negative smears) - BAL
- Send acid-fast stains and cultures
- PPD may be positive, Quantiferon often negative
- Include other pathogens in workup - PCP, bacterial, fungal, viral, histoplasma, coxiella, legionella, coccidiosis etc as indicated
- Serology, galactomannan, beta-D-glucan
Treatment

• Clarithromycin, rifampin, ethambutol typical regimen


• Rifampin significantly lowered clarithromycin levels
Summary

• Atypical Mycobacterial pneumonia in an immunocompromised host - probably

• Very common organism - clinical significance often called into question

• Typically indolent infections in normal hosts

• Treatment may require multiple drugs - macrolides are the mainstay of therapy, plus others.

• Check sensitivities if treating