Streptococcal Grp A (GAS) Upper Respiratory Tract Infection (URTI)

Epidemiology

- Humans only
- Symptomatic pharyngitis patient
- From upper respiratory tract
- Large droplets >5μ
- Direct contact with respiratory secretions
- Indirect, fomites rare since drying inactivates
- Asymptomatic cases but minor role
- Mostly school age children
- Crowding major contributor

Complications:
- Purulent: otitis media, sinusitis, peritonsillar / retropharyngeal abscess
- Systemic: Acute rheumatic fever (ARF), acute glomerulo-nephritis (AG)

Differentiation from Acute Viral Infection inaccurate:
- • Viral have
  - Coryza, conjunctivitis, cough, hoarseness
  - Anterior stomatitis, mouth ulcers
  - Diarrhea
- • Strep grpA have
  - Sore throat, pain, tonsillar exudate
  - Fever, enlarged tender lymph nodes

Diagnosis

- Streptococcus Group A β hemolytic = Streptococcus pyogenes; Gram positive cocci, chains, clear hemolysis (β) on blood agar, bacitracin sensitive on blood agar
- 120 distinct serotypes (based on M protein) and genotypes (M protein gene sequence)

Indications for testing
- Children >3yrs, rare before 3
- Acute symptoms, outbreaks, symptomatic family or day care associates

Testing Contacts
- Not recommended for asymptomatic household contacts except if ARF or AG
- Not recommended in day care or schools (15% healthy carriers)

Lab Diagnosis
- • Culture: Swab posterior nasopharynx and tonsils
  - Culture on sheep blood agar, (24-48hrs)
  - Confirmation on colonies by latex agg, fluorescent AB, coagg or precipitation
  - False negative 10%; false positive common among carriers who have intercurrent viral URTI
- • Rapid tests: extraction of Grp A carbohydrate antigen from throat swab
  - Negative results must be confirmed by culture;
  - Positive tests do not need conformation

Treatment, Prophylaxis

Indications for treatment
- Acute URTI with pos rapid or culture
- Relapse BUT avoid continuous re treatment (probably patient became carrier)
- Management of chronic “relapses” difficult
- Not for repeat acute URTI probably due to viral infection
- Not for asymptomatic with pos tests except is ARF or AG risk in family or group
- Carriers in confirmed GAS pharyngitis in family or small confined group: avoid long term

Post treatment test of cure
- Not recommended
- Except for hi risk of ARF or AG

Treatment
- • Penicillin V, amoxicillin, ampicillin effective in 24hrs with 10 days treatment to prevent ARF
- • Benzathine penicillin
- • Cephalosporin 1 oral acceptable
- • Erythromycin /Clarythromycin 10 days or azithromycin 5 days but resistance to macrolides common
- • No tetracylines, no sulfonamides, no fluoroquinolones

Treatment of carriage
- Not recommended
- Except for hi risk of ARF or AG
- Standard penicillin treatment poor
- Cephalosporins, amoxicillin-clavulanate, clindamycin 10 days
- Rifampin last 4 days

Control

- Test symptomatic URTI
- Treat confirmed cases
- Exclude only during acute phase (fever)

- Test symptomatic contacts and treat positive
- Expect 50% asymptomatic children carriers and 20% adult carriers during outbreak
- Do NOT treat asymptomatic carriers except rarest continuous positive in family / confined group

http://www.infectiousdisease.dhh.louisiana.gov
(800)256-2748