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

Epidemiology

- Humans only
- Symptomatic pharingitis 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

Incubation 2-5 days

ACUTE PHARYNGITIS TONSILLITIS 2-4 days

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

Communicability Acute phase

No longer contagious after 1 day of treatment

Carrier minor role in transmission

Carriers 15%

Outbreaks

Exclude only during acute phase (fever)

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 azythromycin 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
- Cepahlosporins, 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