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

**Epidemiology,**

- **Humans only**
- **Symptomatic pharyngitis patient**
- From upper respiratory tract
- Large droplets >5 µ
- 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**

No longer contagious after 1 day of treatment

**Communicability Acute phase**

Carrier minor role in transmission

**Excluding only during acute phase (fever)**

**Carriers 15%**

**Outbreaks**

**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

**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, Prophylaxis**

**Treatment**

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

**Treatment of carriage**

- Not recommended
- Except for hi risk of ARF or AG
- Standard penicillin treatment poor
- Cephalexin, 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