OVERVIEW:
- Formulary macrolides are: erythromycin (ERY), clarithromycin (CLARI), azithromycin (AZI)
- Spectrum is comparable among all three except for lesser H. influenzae activity for ERY
- Organisms that are resistant to one macrolide are typically resistant to the entire class.

SPECTRUM:
Gram-positive aerobes:
- *Streptococcus pneumoniae* -- very good activity against penicillin susceptible strains. Penicillin intermediate and resistant strains are more frequently resistant to macrolides.
- *Streptococci groups A, B, C, F, & G* beta hemolytic -- very good activity (oxacillin, cefazolin, cephalaxin, and dicloxacillin have better activity)

Gram-negative aerobes:
- Good activity against:
  - *H. influenzae* (including ß-lactamase +) (CLARI & AZI)
  - *M. catarrhalis* (including ß-lactamase +)

Atypical organisms:
- Very good activity against:
  - *Mycoplasma pneumoniae*
  - *Chlamydia pneumoniae, C. trachomatis and Legionella pneumophila*
  - Many non TB mycobacteria (CLARI & AZI)

** Not useful against:**
- Enterococci
- Listeria monocytogenes
- Methicillin-resistant Staphylococcus aureus (MRSA)
- Methicillin-resistant coagulase (-) staphylococci
- Gram negative bacteria except those mentioned above
- *Mycobacterium tuberculosis*

GENERAL DOSING GUIDELINES:
**Adults:**
- **ERY:** 250 - 500mg Q6 hours PO or IV
- **CLARI:** 500 - 1000mg PO QID, IV 500mg bid x 7 days (to 10 days)
- **AZI:** 1g PO QD

**Children:**
- **ERY:** 30-75mg/kg/day divided into tid-qid dosing (max 500mg q6h)
- **CLARI:** 15mg/kg/day divided bid (max=500mg bid)
- **AZI:** obitis & CAP: 10mg/kg on day1, followed by 5mg/kg/d x 4 (max=250mg/d)
  - Pharyngitis/tonsilis: 12mg/kg once daily x 5 (max=500mg/d)

**Dosing for Renal impairment:**
- **ERY:** CrCl <10 decrease dose by 50%
- **CLARI:** CrCl <10 decrease dose by 50%
- **AZI:** No adjustment for renal dysfunction

**RECOMMENDED ADULT DOSING FOR APPROVED USES of CLARI and AZI:**
- See Special Note * below
- Lower respiratory tract infections (LRTIs) including those caused by *atypical* organisms:
  - **CLARI:** 500mg BID X 10 days
  - **AZI:** 500mg X1 then 250 x 4 days (Z-pack)
  - **MAC prophylaxis:** AZI 1200mg Q Week or Treatment: CLARI as LRTI above (do not use as monotherapy)
  - Sinusitis and bronchitis when antibiotic therapy is appropriate: Treat as LRTI above
  - Moderate to severe hospitalized community acquired pneumonia (CAP) in combination with a beta-lactam: PO CLARI: 500mg bid or IV AZI: 500mg QD
  - Step down po monotherapy for CAP after patient improves on a beta-lactam + a macrolide: CLARI 500mg BID to complete 10-14 days of therapy (including the IV portion) is the macrolide of choice for this indication. (May use AZI 500mg PO qd if drug interactions with CLARI are a concern)
  - *Streptococcal pharyngitis in penicillin allergic patients:* CLARI 250mg bid or AZI as LRTI above
  - Uncomplicated skin and soft tissue infections in patients allergic to penicillins or cephalosporins: CLARI 250mg BID or AZI as LRTI above.
  - *Eradication of H. pylori when used in conjunction with other recommended agents:* CLARI 500mg BID - TID x 14 days
  - Chlamydia trachomatis urethritis or cervicitis: AZI 1gram X 1 dose

**Cost comparisons:**
- **ERY:**
  - Inpatient po/d: $0.49
  - Inpatient IV/d: $15.48
  - Outpatient po: $8.75 / 10d
- **CLARI:**
  - Inpatient po/d: $6.30
  - Outpatient po: $27 / 10d
- **AZI:**
  - Inpatient po/d: $5.18/250mg
  - Outpatient po: $19.76/500mg
  - Outpatient po: $29.75 / Z-pack

**Drug Interactions:**
- **ERY:** Include (but not limited to) cisapride, carbamazepine, benzodiazepines, statins, cyclosporine, felodipine, digoxin, theophylline, birth control pills, ergotamines, SSRIs, warfarin
- **CLARI:** Less potent P450 inhibitor than ERY but similar class interactions to ERY.
- **AZI:** Warfarin

*SPECIAL NOTE:* Specific indications must be clearly stated on all prescriptions. In addition, an indication of failure of, or allergy to, first-line therapy is necessary as noted in approved uses.

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