MONOGRAPH

Azithromycin Monograph

Scope (Staff): Medical, Nursing, Pharmacy
Scope (Area): PCH

This document should be read in conjunction with this DISCLAIMER

DESCRIPTION

- Azithromycin is a bacteriostatic macrolide antibiotic which inhibits bacterial protein synthesis by binding to the 50S ribosomal subunit. Azithromycin also has immunomodulatory and anti-inflammatory effects.\(^1\),\(^2\)
  - Azithromycin has a wide spectrum of activity generally indicated for community acquired respiratory infections. It is effective against Gram-positive cocci, *Legionella*, *Mycoplasma*, *Chlamydia*, Gram-negative cocci, *Salmonella* and both Gram-positive and Gram-negative anaerobes.\(^3\)
  - Azithromycin obtains high intracellular concentrations that may be beneficial in the treatment of intracellular pathogens.\(^3\)

INDICATIONS AND RESTRICTIONS

IV: Monitored (orange) antibiotic

- If the use is consistent with a standard approved indication, this must be communicated to ChAMP by documenting that indication on all prescriptions (inpatient and outpatient).
- The ChAMP team will review if ongoing therapy is required and/or if the order does not meet ChAMP Standard Indications.
- If use is not for a standard approved indication, phone approval must be obtained from ChAMP before prescription.

FORMULATIONS

Available at PCH:
- 200mg/5mL oral suspension for reconstitution (Zithromax\(^\circledR\))
- 500mg tablet (Zithromax\(^\circledR\))
- 500mg powder for injection vial (DBL brand)

Other formulations available:
- 500mg tablet – multiple generic brands available
- 500mg powder for injection vial (Alphapharm and Azith\(^\circledR\))
### DOSAGE

- The doses listed below fall within the standard range. Higher doses may be prescribed for certain situations.
- This should be in consultation with Infectious Diseases or Microbiology consultants.

**IV:**
- **Usual dose:** 10mg/kg/dose (to a maximum of 500mg) once daily – convert to oral therapy as soon as is practical.\(^4, 5\)

**Oral:**

**Usual dose:**

**Children < 6 months:**
- Not routinely used in children < 6 months of age except in pertussis treatment or prophylaxis or for chlamydia conjunctivitis or pneumonitis.

**Children ≥ 6 months:**
- 10mg/kg/dose (to a maximum of 500mg) once daily \(^4\)

**Pertussis (treatment and prophylaxis):**
- **Children < 6 months:** 10mg/kg/dose (to a maximum of 500mg) daily for five days
- **Children ≥ 6 months:** 10mg/kg/dose (to a maximum of 500mg) daily for one day then reduce to 5mg/kg/dose (to a maximum of 250mg) daily for a further four days.\(^4\)

**Trachoma and *Chlamydia trachomatis* conjunctivitis:**
- **Infants and children ≥ 1 month old:** 20mg/kg/dose to a maximum of 1 gram as a single dose. Repeat doses may be required.\(^3, 4\)
- **Neonates:** please refer to neonatal clinical care drug protocols

**Cystic fibrosis requiring anti-inflammatory treatment:**
- **Children ≥ 6 years:**
  - weight 25 to <40kg = 250mg as a single dose three times a week
  - weight ≥ 40kg = 500mg as a single dose three times a week.\(^6\)

**Neonates:**
- Please refer to neonatal clinical care drug protocols

<table>
<thead>
<tr>
<th>DOSAGE ADJUSTMENT</th>
<th>Dosage adjustment required in renal impairment:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No dosage adjustment required in renal impairment. Use with caution in patients with creatinine clearance less than 10mL/minute and in severe hepatic disease. Contact pharmacy for advice.(^3, 7, 8)</td>
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<table>
<thead>
<tr>
<th>DOSAGE ADJUSTMENT</th>
<th>Dosage adjustment required in hepatic impairment:</th>
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<tbody>
<tr>
<td></td>
<td>No dosage adjustment is required in mild to moderate hepatic</td>
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impairment.
- Use with caution in severe hepatic impairment, dose reduction may be required. Contact pharmacy for advice. (3, 6, 8)

## RECONSTITUTION

**IV:**
- Reconstitute each 500mg vial with 4.8mL water for injection, and shake to dissolve this will result in a 100mg/mL solution, further dilute with compatible fluid to a concentration of 1-2mg/mL (higher concentrations result in local infusion site reactions).(8, 9)
- Refer to administration section below for further information.

**Oral:**
- Reconstitute each 200mg/5mL oral suspension for reconstitution bottle with 9mL of water and shake well, this will result in a 200mg/5mL suspension.(7)

## ADMINISTRATION

### IV infusion:
- Once reconstituted, further dilute to a concentration of 1mg/mL to 2mg/mL and infuse over 1 or 3 hours as below.(8, 9)

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Duration of infusion</th>
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<tbody>
<tr>
<td>1mg/mL</td>
<td>3 hours</td>
</tr>
<tr>
<td>2mg/mL</td>
<td>1 hours</td>
</tr>
</tbody>
</table>

- The infusion of higher concentrations may result in local infusion site reactions.(8, 9)

**Oral:**
- Oral tablets and liquid can be administered without regard to food.(2, 10)

## MONITORING
- Hepatic and haematological function should be monitored weekly with prolonged therapy at treatment doses (i.e. longer than 7 days).(2)
## ADVERSE EFFECTS

**Note:** Infantile hypertrophic pyloric stenosis is associated with the use of azithromycin in infants.

- **Common:** pain and inflammation at infusion site, anorexia, diarrhoea, vomiting, nausea, flatulence, abdominal pain, cramps, candidal infections, dizziness, malaise, paraesthesia, arthralgia, vision and taste disturbances.\(^1, 6\)

- **Rare:** blood dyscrasias (e.g. thrombocytopenia) QT prolongation, torsades de pointes, rash, photosensitivity, hypersensitivity reactions, psychiatric disturbances, ototoxicity, chest pain, headache, constipation, gastritis, chest pain, oedema, anxiety, sleep disturbances, hypoesthesia, photosensitivity, renal impairment, tongue discoulouration, cholestatic hepatitis, pancreatitis.\(^1, 6\)

## COMPATIBLE FLUIDS

- Glucose 5%
- Hartmann’s
- Sodium chloride 0.45% and 0.9%
- Glucose/sodium chloride solutions\(^8, 9\)

## STORAGE

- **Vial:** Store below 25 degrees Celsius and protect from light prior to reconstitution.
- **Oral tablet:** Store below 25 degrees Celsius and protect from light.
- **Oral powder for suspension:** Store unreconstituted suspension below 30 degrees Celsius. Once reconstituted, the suspension may be stored below 30 degrees Celsius. Any suspension remaining after 10 days should be discarded.\(^7\)

## PRECAUTIONS

- Infantile hypertrophic pyloric stenosis is associated with the use of azithromycin in infants. The greatest incidence is in the first 2 weeks of life, reducing after this time with no increase in incidence after 7 weeks of age.\(^1\)

- Azithromycin has been shown to prolong the QT interval\(^7\) and should be used with caution in patients at risk of QT prolongation (including concomitant use of other drugs causing QT prolongation and cardiac arrhythmias or cardiac insufficiency).\(^7\)

- Solutions at a concentration of greater than 2mg/mL may result in local infusion-site reactions.\(^8, 9\)

## CONTRAINDICATIONS

- Azithromycin is contraindicated in patients with a history of a hypersensitivity reaction to erythromycin or other macrolide or ketolide antibiotic.\(^1, 2, 7, 8, 11\)
### INTERACTIONS
Azithromycin has many drug interactions; please consult PCH approved references, your ward pharmacist or Pharmacy on 6456 0190 (option 1) for more information.

- Azithromycin has a long half-life and therefore, any interactions may persist after the drug has been ceased.\(^{(1)}\)
- Azithromycin inhibits P-glycoprotein and may increase digoxin levels and other P-glycoprotein substrates such as tacrolimus and ciclosporin. Digoxin levels should be monitored if used together.\(^{(1, 10)}\)
- Azithromycin may increase cyclosporine levels. Ciclosporin levels should be monitored and dose adjustment may be required.\(^{(1, 7)}\)
- Azithromycin has been shown to prolong the QT interval. Care should be taken in at risk patients.\(^{(1)}\)
- Magnesium and aluminium containing antacids reduce the absorption of azithromycin. If they are required to be taken, doses of azithromycin and antacids should be separated.\(^{(10, 12)}\)

### COMMENTS
- Each 500mg vial of powder for injection contains 114mg of sodium.\(^{(9)}\)
- Each 200mg/5mL oral suspension contains 3.89grams/5mL of sucrose.\(^{(1)}\)
- Oral azithromycin therapy is as effective as IV. Consider switching to oral dosing as soon as clinically appropriate.\(^{(3)}\)
- Azithromycin has a long half-life. Short courses are frequently effective.

### MANUFACTURER SAFETY DATA SHEET (SDS)
- To access the Manufacturer SDS for this product, use the following link to ChemAlert.

**Please note: The information contained in this guideline is to assist with the preparation and administration of azithromycin. Any variations to the doses recommended should be clarified with the prescriber prior to administration**

**Related internal policies, procedures and guidelines**

- **Antimicrobial Stewardship Policy** (Medication Management Manual)
- **ChAMP Empiric Guidelines** (ChAMP Manual)
References


Useful resources (including related forms)

Neonatal Clinical Care Unit Medication Protocols (KEMH)
This document can be made available in alternative formats on request for a person with a disability.

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