# Piperacillin/tazobactam – Paediatric

## Areas where Guideline applicable
- All paediatric wards (H1, J1, J2)

## Areas where Guideline not applicable
- Adult wards, NICU

## Keywords
- Tazocin®, piperacillin, tazobactam, paediatrics, protocol, guideline, administration, drug, medication

## Authorised Prescribers:
- Registered medical officers

## Indication for use
- Empiric treatment following accepted guidelines or directed treatment of infections caused by susceptible organisms
- **GUIDANCE REGISTRATION REQUIRED WHEN PRESCRIBED**

## Clinical condition
- **THIS IS A RESTRICTED ANTIBIOTIC**
- Guidance MS® registration must be done at the time of prescribing and the registration number entered in Medchart
  - Febrile neutropenia
  - Cystic fibrosis, acute exacerbation
  - Directed treatment on advice of Infectious Diseases or Microbiology

## Contraindications
  - **Immediate hypersensitivity to any penicillin** (such as anaphylaxis, however, consider avoiding in any allergic reaction to a penicillin)
  - Severe or life-threatening hypersensitivity reaction to any cephalosporin or carbapenem due to potential cross-reactivity

## Precautions
  - History of jaundice and/or hepatic dysfunction from piperacillin with tazobactam, ticarcillin with clavulanic acid, or amoxicillin with clavulanic acid
  - Non-immediate hypersensitivity to penicillins or history of a mild adverse drug event with a penicillin
  - Renal impairment – bleeding abnormalities more likely. Monitor renal function with prolonged use
  - Sodium restriction, heart failure – contains approximately; 64 mg sodium per gram piperacillin (Tazocin EF®)
    54 mg sodium per gram piperacillin (PiperTaz Sandoz®, Tazopip®)
  - Coagulation disorder – increases risk of bleeding abnormalities
  - Seizures may occur with high doses
  - May cause hypokalaemia. Monitor electrolytes in patients with low potassium reserves and/or who are receiving cytotoxic therapy or diuretics.
  - Does not penetrate CSF and not recommended for meningitis
| **Dosage** | Usual dose:  
- 100 mg/kg/dose of piperacillin every EIGHT hours (to a maximum of 4g piperacillin)  
Note: dose should be prescribed and calculated on piperacillin component. Endorsing this on the prescription will reduce confusion. |
| **Duration of therapy** | Duration is guided by the severity of infection and the patient's clinical and bacteriological progress. |
| **Administration instructions** | 1. Reconstitute with 17mL of diluent (sodium chloride 0.9% or water for injection) to produce 200 mg/mL piperacillin solution, total volume = 20 mL  
2. Further dilute dose to 20 mg/mL of piperacillin for infusion. Suitable diluents include glucose 5%, sodium chloride 0.9%. Note: ONLY Tazocin EF® is compatible with Hartmann’s  
3. Intravenous infusion over 30 minutes*  
*If proven pseudomonal infection, infuse over TWO hours (as per respiratory and oncology medical teams) |
| **Monitoring requirements** | Monitor patient for clinical signs of improvement such as fever and biological markers of infection  
Monitor renal function and serum electrolytes, complete blood count and liver function; especially patients on prolonged courses |
| **Management of complications** | - Hypersensitivity reactions – seek medical officer for review of patient or rapid response as clinical symptoms dictate |
| **Important Drug Interactions** | - Piperacillin should be separated from aminoglycoside antibiotics by ONE hour. If unable to separate doses or for first dose in septic patients, flush the line well with sodium chloride 0.9% before and after each medication  
- Probencid produces a longer half-life and lower renal clearance of piperacillin and tazobactam  
- Methotrexate excretion is reduced by penicillins  
- Non-depolarising neuromuscular blockers – activity may be prolonged by piperacillin  
- Anticoagulants – piperacillin/tazobactam may reduce clotting potential. |
| **Basis of Guideline:** | Australian Injectable Drug Handbook 7th Edition SHPA Collingwood 3066  
Paediatric Injectable Medicines Handbook. Westmead Kids, accessed 3/7/19  
Piperacillin and tazobactam (PipTaz-AFT) Product Information. AFT Pharmaceuticals 22/11/17  
[NSW Health GL2015_013 Initial management of fever/suspected sepsis in oncology/transplant patients] |
| **Groups consulted in development of this guideline** | Pharmacy, Infectious Diseases, Paediatrics |
| **AUTHORISATION** | Author (Name) Michelle Jenkins  
Position Senior Pharmacist, paediatrics  
Department Pharmacy JHH  
Department Contact (for ongoing maintenance of Guideline) Ph 02 49213635 |
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