**PARENTERAL DRUG DOSING GUIDELINES FOR PEDIATRIC PATIENTS**

Antimicrobial doses listed in this chart represent usual initial doses for pediatric patients outside the neonate period with moderate to severe infections due to susceptible organisms. Please contact the pediatric infectious diseases PharmD (Jessica Gillon, pager 835-6961) for more dosing information.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Drug | Route | Restricted | Usual dose and frequency (mg/kg/dose; max mg/dose) | | Renal dose adjust | Monitor | | Notes | |
| **PENICILLINS** | | | | | | | | | |
| Ampicillin | IV, IM | N | 100 q6h; max 2000 | | Y | Prolonged: SCr, BUN, LFTs, CBC/d | | Can be given IM at 25mg/kg/dose q6h  Can NOT give as extended infusion | |
| Ampicillin/ sulbactam | IV | N | 50 (ampicillin) q6h | | Y | Can be administered as extended infusion | |
| Nafcillin | IV, IM | N | 50 q6h OR  200 continuous; max 2000 | | N | Baseline and periodic: CBC/d, UA, BUN, SCr, LFTs | | Can be administered as continuous or extended infusion | |
| Penicillin G aqueous | IV, IM | N | 50,000 units/kg/dose q4h | | Y | Periodic: BMP, CBC/d | | Can be administered as continuous or extended infusion | |
| Piperacillin/ tazobactam | IV | N | 100 q6h; max 4500 | | Y | Periodic: CMP, PT, PTT, INR, CBC/d | | Can be administered as continuous or extended infusion | |
| **CEPHALOSPORINS** | | | | | | | | | |
| Cefazolin | IV | N | 50 q8h; max 2000 | | Y | SCr, BUN, LFTs, CBC/d, PTT | | Does NOT cover Haemophilus or Moraxella | |
| Cefoxitin | IV | N | 40 q6h; max 3000 | | Y | Prolonged: SCr, BUN, LFTs, CBC/d | |  | |
| Cefuroxime | IV | N | 50 q6h; max 1500 | | Y |  | |
| Cefotaxime | IV | N | 50 q6h; max 2000 | | Y | Only use in neonates < 28 days or < 44 wks corrected gestation if premature | |
| Ceftriaxone | IV, IM | N | 50 q12h; max 2000 | | N | Prolonged: SCr, BUN, LFTs, CBC/d, PT | | CI neonates < 28 days or with concomitant calcium containing infusions | |
| Ceftazidime | IV | N | 50 q8h; max 2000  CF: 100 q8h; max 4000 | | Y | Prolonged: LFTs, CBC/d | | Doesn’t have staphylococcal coverage | |
| Cefepime | IV | N | 50 q8h; max 2000 | | Y | Prolonged: SCr, BUN, LFTs, CBC/d | | Can be administered as continuous or extended infusion | |
| Ceftaroline | IV | Y  -Serious infections with MRSA | 15 q8h; max 600 | | Y | SCr, BUN | | MRSA but no *Pseudomonas* or VRE activity | |
| **CARBAPENEMS** | | | | | | | | | |
| Meropenem | IV | Y  -Clinical worsening despite broad-spectrum antibiotic therapy  -H/O ESBL or current ESBL infection  -H/O MDR Pseudomonas or other GNR or current MDR GN infection | 20 q8h; max 1000  Meningitis: 40 q8h; max 2000 | | Y | Prolonged: SCr, BUN, LFTs, CBC/d | | Can be administered as an extended infusion | |
| **AMINOGLYCOSIDES** | | | | | | | | | |
| Amikacin | IV | N | 10 q8h | | Y | UA, urine output, SCr, BUN, peaks and troughs | | DOC for double coverage of resistant GNR  Goal EI: < 3; traditional < 8 | |
| Gentamicin | IV | N | 2.5 q8h OR 7 q24h | | Y | Check hearing if on therapy > 2 weeks | |
| Tobramycin | IV | N | 2.5 q8h OR 7 q24h  CF: 10 q24h | | Y | DOC for CF double coverage of *Pseudomonas* | |
| **MONOBACTAMS** | | | | | | | | | |
| Aztreonam | IV | Y | 30 q6h; max 2000  CF: 50 q6h; max 3000 | | Y | SCr, BUN, LFTs | | Can be combined with Avycaz for metallo-B-Lactamases | |
| **MACROLIDES** | | | | | | | | | |
| Azithromycin | IV | N | | 10 q24; max 500 | N | | LFTs, CBC/d | | Dose same IV and PO |
| **FLUOROQUINOLONES** | | | | | | | | | |
| Ciprofloxacin | IV | N | 10 q12; max 400 | | Y | Prolonged: SCr, BUN, LFTs, CBC/d | | 80% bioavailable  400 q8h has been used for pseudomonas | |
| Levofloxacin | IV | N | <5y: 10 q12h  ≥5y: 10 q24; max 750 | | Y | 100% bioavailable | |
| **GRAM POSITIVE AGENTS** | | | | | | | | | |
| Vancomycin | IV | N | 15 q6h | | Y | SCr, BUN, UA, troughs, and CBC/d | | Typically target troughs 8 – 12; if severe infection 10 – 20; Calculate AUC/MIC for invasive infections requiring long term therapy | |
| Clindamycin | IV | N | 13 q8h; max 600 | | N | Prolonged: SCr, BUN, LFTs, CBC/d | | >90% bioavailable | |
| TMP/SMX | IV | N | PJP: 5 q6h | | Y | SCr, BUN, LFTs, CBC/d, UA | | 90 – 100 % bioavailable  CI < 60 days old  Large volume infusion | |
| Daptomycin | IV | Y  -Serious infections with MRSA  -MRSA or VRE bacteremia | 10 q24 | | Y | Weekly: CPK  Periodic: SCr, BUN | | Can’t be used to treat pneumonia | |
| Linezolid | IV | Y  -Oral or IV therapy for MRSA/VRE | <12y: 10 q8h; max 600  >12y: 10 q12h; max 600 | | N | CBC (if > 2 weeks therapy) | | Avoid with SSRI and ADHD medications  100% bioavailable  Check visual fxn if on therapy > 3 mos | |
| **MISCELLANEOUS AGENTS** | | | | | | | | | |
| Doxycycline | IV | N | | 2.2 q12h; max 100 | N | | Prolonged: SCr, BUN, LFTs, CBC/d | | 100% bioavailable |
| Metronidazole | IV | N | | 10 q8h; max 500 | N | | Baseline and Prolonged: CBC/d | | 100% bioavailable |
| Rifampin | IV | N | | 10 q12h; max 600 | N | | Periodic: LFTs, Bili, CBC/d, PLTs | | 100% bioavailable  Turns all body fluids red |
| **ANTIVIRALS** | | | | | | | | | |
| Acyclovir | IV | N | 1 – 3 mo: 20 q8h  >3 mo: 10 q8h | | Y | UA, SCr, BUN, urine output, LFTs, CBC/d | | HSV, VZV  High doses: monitor for neuro- and nephro- toxicity | |
| Ganciclovir | IV | N | 5 q12h | | Y | CBC/d, PLT, urine output, SCr, eye exams, LFTs, BP, UA | | CMV | |
| Cidofovir | IV | N | 5 qweek | | Y | Before each dose: UA, CBC/d, CMP | | Adenovirus, Resistant CMV  Monitor Intraocular pressure and visual acuity  Look for signs of uveitis/iritis | |
| Foscarnet | IV | N | 60 q8h | | Y | BMP, CBC/d | | Resistant viruses  Ophthalmologic exams  Watch for signs of polyuria/polydipsia | |
| **ANTIFUNGALS** | | | | | | | | | |
| Amphotericin B Deoxycolate | IV | Y  -Invasive fungal infections | 0.5 – 1 q24h | | N | BMP, temp, PT/PTT, CBC/d, I/O, VS | | Fungal infections with urinary tract involvement and neonates  Doesn’t cover *Candida lusitaniae* | |
| Amphotericin B Liposomal | IV | Y  -Invasive fungal infections | 3 – 7 q24h | | N | BMP CBC/d, I/O, VS | | Superior CNS penetration; better tolerated; Cannot use for UTI  Doesn’t cover *Candida lusitaniae* | |
| Fluconazole | IV | N | 12 q24h | | Y | Periodic: LFTs, SCr, BUN, K, CBC/d | | 100% bioavailable  Can be divided q12h if volume is a concern in small babies | |
| Voriconazole | IV | N | 9 q12h; max 600 | | Y | CMP, Bili, ECG, pancreatic function, troughs | | Trough at day 5  Send PREDICT testing | |
| Micafungin | IV | N | Ppx: 2 q24; max 100  Tx: <4m: 10 q24  ≥4m: 2-4 q24h; max 150 | | N | LFTs, SCr, BUN, CBC/d | | Doesn’t cover *Candida parapsilosis* | |