

Infection Management Guideline: Empirical Antibiotic Therapy in Children

This policy is intended to guide medical staff in GG&C hospitals on the choice of appropriate treatment of infections in children. Please consult local unit guidance for patients in Schiehallion ward and the neonatal unit.

The initial treatment may need to be modified according to clinical response and results of microbiology and other investigations. The appropriate specimens for microbiology should be taken whenever possible before administering antibiotics, however this will depend upon the severity of the illness and the nature of the specimen. In patients who are stable and not septic, and in whom infection is only one of a number of possibilities, consideration should be given to deferring antibiotics until the results of cultures are known, as long as there is no change in the clinical condition in the interim.

The need for antibiotics and their route of administration should be reviewed daily.

A definite decision regarding treatment should be taken at 2 and 5 days. When clinically reasonable, consider changing from IV to oral therapy.

Doses of antibiotics are recommended in the BNF for Children.

CNS infection	Immunocompromised patient	Septicaemia of unknown origin	Lower respiratory tract	Upper respiratory tract	Gastro-intestinal	Urinary tract	Bone / joint infection	Skin / soft tissue
<p>Bacterial meningitis</p> <p>Always refer to senior staff</p> <p>Under 6 weeks IV Cefotaxime + IV Amoxicillin + IV Gentamicin Steroids are not of proven benefit in this age group</p> <p>6 weeks to 3 months IV Cefotaxime Steroids are not of proven benefit in this age group</p> <p>Over 3 months IV Cefotaxime Add Dexamethasone for 4 days if bacterial meningitis without purpura</p> <p>If true penicillin allergy: contact ID or microbiology for advice</p> <p>Duration: on advice from ID or microbiology</p> <p>After 48 hours if child is > 1 months and unlikely to require HDU/ITU care then consider switching from Cefotaxime to Ceftriaxone*</p>	<p>Immunocompromised plus sepsis</p> <p>(see also Schiehallion neutropenia and fever policy if patient known to Schiehallion)</p> <p>IV Piperacillin/Tazobactam + IV Gentamicin</p> <p>If staphylococcal infection (e.g line related sepsis or soft tissue infection) suspected ADD</p> <p>IV Vancomycin</p> <p>If true penicillin allergy: IV Vancomycin + IV Gentamicin</p> <p>N.B If haematology/ oncology patient discuss with appropriate specialist and/ or seek microbiology or ID advice.</p> <p>Duration: on advice from ID or microbiology</p>	<p>Neonate - Community acquired</p> <p>Early onset <72 hours of age IV Benzylpenicillin + IV Gentamicin</p> <p>Late onset >72 hours of age IV Cefotaxime + IV Amoxicillin + IV Gentamicin</p> <p>1 month and above – Community acquired</p> <p>IV Cefotaxime+ IV Gentamicin if severe</p> <p>If meningitis cannot be excluded consider adding IV Amoxicillin for listeria cover up to 6 weeks of age.</p> <p>1 month and above – Hospital acquired</p> <p>IV Piperacillin/Tazobactam + IV Gentamicin</p> <p>If true penicillin allergy: consult ID or microbiology for advice</p> <p>Duration: on advice from ID or microbiology</p>	<p>Non severe community acquired pneumonia (CAP)</p> <p>Under 5 years S.pneumoniae the likely pathogen Oral Amoxicillin Duration 5 days</p> <p>IV amoxicillin may be used if oral route compromised</p> <p>If true penicillin allergy: Oral Azithromycin** Duration 3 days</p> <p>5yrs and above or mycoplasma or chlamydia likely pathogen Oral Azithromycin** Duration 3 days</p>	<p>Tonsillitis (if antibiotic required)</p> <p>Oral Penicillin V (IV Benzylpenicillin if unable to swallow) Duration 5-10 days</p> <p>If true penicillin allergy: IV or oral Clarithromycin** Duration 5 days</p> <p>Pertussis</p> <p>Oral Clarithromycin** Duration 7 days</p> <p>Otitis media</p> <p>Children with acute otitis media should not be routinely prescribed antibiotics. Consider delayed antibiotic treatment</p> <p>Oral Amoxicillin Duration 5 days</p> <p>If true penicillin allergy: Oral Clarithromycin** Duration 5 days</p>	<p>Gastroenteritis</p> <p>No antibiotic usually required</p> <p>Intra-abdominal sepsis</p> <p>IV Cefotaxime + IV Metronidazole</p> <p>If true penicillin allergy: IV Clindamycin + IV Gentamicin</p>	<p>Upper tract UTI/ Pyelonephritis</p> <ul style="list-style-type: none"> Fever above 38°C and significant systemic upset or if patient below 3 months age <p>IV ceftriaxone* (consider stat dose of gentamicin if severely unwell) Duration 10 days (min 48 hours IV then review for IVOST)</p> <p>If true penicillin allergy: use gentamicin initially and discuss with micro or ID</p> <ul style="list-style-type: none"> Fever above 38°C and mild systemic upset in patients above 3 months of age <p>Oral cefalexin If true penicillin allergy: Oral Ciprofloxacin Duration 7 days</p> <p>Lower tract UTI/ Cystitis</p> <ul style="list-style-type: none"> Increased frequency, dysuria with no systemic upset or fever and nitrite negative <p>Await urine culture result</p> <ul style="list-style-type: none"> If nitrite positive or significant symptoms/concerns re lower UTI and no fever <p>Oral cefalexin If true penicillin allergy and over 3 months of age: Oral Nitrofurantoin Duration 3 days</p> <p>If true penicillin allergy and under 3 months of age: consult microbiology or ID for advice</p> <p>If a child is known to the renal service or has had previous UTIs then please check previous urine culture results as this may influence empiric prescribing.</p> <p>See also Paediatric UTI policy</p>	<p>Septic arthritis/osteomyelitis</p> <p>5 years and under IV Cefuroxime Switching to oral co-amoxiclav if true penicillin allergy: Consult microbiology or ID</p> <p>6 years and above IV Flucloxacillin Switching to oral co-amoxiclav liquid or flucloxacillin capsules</p> <p>If true penicillin allergy: IV Clindamycin switching to oral Clindamycin</p> <p>If incomplete Hib immunisation then use IV Co-amoxiclav</p>	<p>Cellulitis</p> <p>IV Flucloxacillin Switching to oral Flucloxacillin only</p> <p>If true penicillin allergy: IV Clarithromycin** or IV Clindamycin Duration 5-7 days</p> <p>If severe sepsis or incomplete Hib immunisation ADD Gentamicin.</p> <p>Modify therapy according to culture results and clinical response</p> <p>Orbital cellulitis / Peri-Orbital Cellulitis</p> <p>Refer to ENT / Ophthalmology guidance IV Cefotaxime + IV Flucloxacillin (+ IV Metronidazole if no clinical improvement after 24-36 hrs) Switching to oral co-amoxiclav If true penicillin allergy: IV Clindamycin + IV Gentamicin Switching to oral clindamycin Duration 7-10 days</p> <p>Infected human/animal bite</p> <p>Oral Co-amoxiclav If true penicillin allergy: Oral Metronidazole + Oral Clarithromycin** Animal bite: Oral Metronidazole + Oral Co-trimoxazole Duration 5-7 days</p> <p>3 days of prophylactic antibiotics should be given to all moderate/severe bites especially if oedema, crush, puncture wounds, facial, genital, hand or foot bites or immuno-compromised hosts. Consider tetanus prophylaxis and for human bites, blood borne virus transmission. Consider rabies if animal bite acquired in endemic area.</p>
<p>Seek ID / microbiology advice about every case of meningococcal infection.</p> <p>Inform Public Health Medicine on 0141 201 4917 during office hours and 0141 211 3600 outwith office hours to discuss possible prophylaxis and contact tracing. (Prophylaxis not required for index case)</p>	<p>*Ceftriaxone in neonates see cautions / contraindications in BNF – an alternative is Cefotaxime If higher dose of Ceftriaxone is indicated in very severe infection see BNF dosing.</p> <p>**Azithromycin/Clarithromycin numerous serious drug interactions see BNF or contact pharmacy for details</p>		<p>Severe CAP</p> <p>IV Cefuroxime If septic consider adding IV Gentamicin</p> <p>If suspicious of atypical pneumonia add Azithromycin**</p> <p>Aspiration pneumonia</p> <p>IV Amoxicillin If true penicillin allergy: IV Clindamycin</p> <p>Pneumonia complicating influenza</p> <p>IV Co-amoxiclav If true penicillin allergy: contact ID or microbiology for advice</p>	<p>Acute mastoiditis</p> <p>IV Cefuroxime + IV Metronidazole Switching to oral Co-amoxiclav</p> <p>If true penicillin allergy: IV Clindamycin and IV Gentamicin switching to oral clindamycin</p>				

Review Antibiotic Therapy DAILY: Stop? Simplify? Switch?

RATIONALISE ANTIBIOTIC THERAPY when microbiology results become available or clinical condition changes.

NB. Caution in renal/liver impairment. For dose adjustments see BNF for Children or contact Pharmacy for advice.

FURTHER ADVICE

Can be obtained from a Consultant Microbiologist, a Consultant in Paediatric ID or the Paediatric Antimicrobial Pharmacist. Infection Control advice may be given by a Consultant Microbiologist or Infection Control Nurses.