NHS
Greater Glasgow and Clyde

CLINICAL GUIDELINE

Empirical Antibiotic Therapy in Children

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

Version Number:	6
Are there changes to the clinical content of this version:	Yes
Date Approved:	14th November 2017
Date of Next Review:	31st December 2019
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Approval Group:	Antimicrobial Utilisation Committee

Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Infection Management Guideline: Empirical Antibiotic Therapy in Children

NHS Greater Glasgow and Clyde

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 microbology 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 possiblities, 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 administation 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 as recomended in the childrens BNF.

CNS infection

Bacterial meningitis

Always refer to senior staff

Under 6 weeks
IV **Cefotaxime**
IV **Amoxicillin** +
IV **Gentamicin**
Steroids are not of proven benefit in this age group

6 weeks to 3 months
IV **Cefotaxime**
Steroids are not of proven benefit in this age group

Over 3 months
IV **Cefotaxime**
Add **Dexamethasone** for 4 days if bacterial meningitis without purpura

If true penicillin allergy:
contact ID or microbiology for advice

Duration: on advice from ID or microbiology

After 48 hours if child is > 3 months and unlikely to require HDU/ITU care then consider switching from Cefotaxime to **Ceftriaxone***

Seek ID / microbiology advice about every case of menigingococcal infection.

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)

Immunocompromised patient

Immunocompromised plus sepsis

(see also Schiehallion neutropenia and fever policy if patient known to Schiehallion)

IV **Piperacillin/Tazobactam** +
IV **Gentamicin**

If staphylococcal infection (e.g line related sepsis or soft tissue infection) suspected ADD

IV **Vancomycin**

If true penicillin allergy:
IV **Vancomycin** +
IV **Gentamicin**

N.B If haematology/ oncology patient discuss with appropriate specialist and/ or seek microbiology or ID advice.

Duration: on advice from ID or microbiology

Septicaemia of unknown origin

Neonate - Community acquired

Early onset <72 hours of age
IV **Benzylpenicillin** +
IV **Gentamicin**

Late onset >72 hours of age
IV **Cefotaxime** +
IV **Amoxicillin** +
IV **Gentamicin**

1 month and above – Community acquired

IV **Cefotaxime**+
IV **Gentamicin** if severe

If meningitis cannot be excluded consider adding IV Amoxicillin for listeria cover up to 6 weeks of age.

1 month and above – Hospital acquired

IV **Piperacillin/Tazobactam** +
IV **Gentamicin**

If true penicillin allergy:
consult ID or microbiology for advice

Duration: on advice from ID or microbiology

***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.

****Azithromycin/Clarithromycin numerous serious drug interactions see BNF or contact pharmacy for details**

Lower respiratory tract

Non severe community acquired pneumonia (CAP)

Under 5 years
S.pneumoniae the likely pathogen
Oral Amoxicillin
Duration 7 days

IV amoxicillin may be used if oral route compromised

or if true penicillin allergy:
Oral **Azithromycin**
Duration 3 days

5yrs and above or mycoplasma or chlamydia likely pathogen
Oral **Azithromycin**
Duration 3 days

Severe CAP

IV **Cefuroxime**
If septic consider adding IV **Gentamicin**

If suspicious of atypical pneumonia add **Azithromycin****

Aspiration pneumonia

IV **Co-amoxiclav**

If true penicillin allergy:
IV **Clindamycin**

Pneumonia complicating influenza

IV **Co-amoxiclav**

If true penicillin allergy:
contact ID or microbiology for advice

Upper respiratory tract

Tonsillitis (if antibiotic required)

Oral **Penicillin** V
(IV Benzylpenicillin if unable to swallow)
Duration 10 days

If true penicillin allergy:
IV or oral **Clarithromycin****
Duration 5 days

Pertussis

Oral **Clarithromycin****
Duration 7 days

Otitis media

Children with acute otitis media should not be routinely prescribed antibiotics.
Consider delayed antibiotic treatment

Oral **Amoxicillin**
Duration 5 days

If true penicillin allergy:
Oral Clarithromycin**
Duration 5 days

Acute mastoiditis

IV **Cefuroxime** +
IV **Metronidazole**
Switching to oral Co-amoxiclav

If true penicillin allergy:
IV **Clindamycin** and
IV Gentamicin switching to oral clindamycin

Gastro-intestinal

Gastroenteritis

No antibiotic usually required

Intra-abdominal sepsis

IV **Cefotaxime** +
IV **Metronidazole**

If true penicillin allergy:
IV Clindamycin +
IV Gentamicin

Urinary tract

Upper tract UTI/ Pyelonephritis

- Fever above 38°c and significant systemic upset or if patient below 6 months age

I.V. ceftriaxone* +/- gentamicin

If true penicillin allergy:
use gentamicin initially and discuss with micro or ID

- Fever above 38°c and mild systemic upset in patients above 6 months of age

Oral co-amoxiclav
If true penicillin allergy:
ciprofloxacin
Duration 7 days

Lower tract UTI/ Cystitis

- If nitrite positive or significant symptoms/concerns re lower UTI and no fever

Oral co-amoxiclav
If true penicillin allergy:
nitrofurantoin (over 3 months of age)
Duration 3 days

- Increased frequency, dysuria with no systemic upset or fever and nitrite negative

Await urine culture result

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.

See also Paediatric UTI policy

Bone / joint infection

Septic arthritis/osteomyelitis

5 years and under
IV **Cefuroxime**
Switching to oral co-amoxiclav
Consult microbiology or ID
if true penicillin allergy:

If incomplete Hib immunisation then use
IV **Co-amoxiclav**

6 years and above
IV **Flucloxacillin** +
Oral **Sodium fusidate**
Switching to oral co-amoxiclav liquid or flucloxacillin capsules

If true penicillin allergy:
IV **Clindamycin** switching to oral Clindamycin

Skin / soft tissue

Cellulitis

IV **Benzylpenicillin** +
IV **Flucloxacillin**
Switching to oral Flucloxacillin only

If true penicillin allergy:
IV **Clarithromycin**** or
IV **Clindamycin**
Duration 7-10 days

If severe sepsis or incomplete Hib immunisation ADD Gentamicin.

Modify therapy according to culture results and clinical response

Orbital cellulitis / Peri-Orbital Cellulitis

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

Infected human/animal bite

Oral **Co-amoxiclav**
If true penicillin allergy:
Human bite:
Oral **Metronidazole** +
Oral **Clarithromycin****
Animal bite:
Oral **Metronidazole** +
Oral **Co-trimoxazole**
Duration 7 days
3 days of prophylactic antibiotics should 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.

Review Antibiotic Therapy DAILY: Stop? Simplify? Switch?

RATIONALISE ANTIBIOTIC THERAPY when microbiology results become available or clinical condition changes.
NB. Recommended doses are based on normal renal / liver function, see BNF for dose adjustments in renal / liver impairment.

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.

Greater Glasgow & Clyde Antimicrobial Utilisation Committee, ADTC. December 2017 Review December 2019. Review updates on: www.ggcformulary.scot.nhs.uk/Guidelines

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