

ANZPID-ASAP Guidelines for Antibiotic Duration and IV-Oral Switch in Children

Infection	Minimum IV antibiotic duration	Criteria for switch to oral antibiotic	Minimum total antibiotic duration	Notes
Bacteraemia and endocarditis				
Meningococcal bacteraemia	4-5 days [C-III]	No oral switch	4-5 days [C-III]	Duration applicable for uncomplicated bacteraemia
Pneumococcal bacteraemia	Occult*: fever at 24h? Afebrile: 0 days [B-I] Febrile: 1 day [C-IV]	Oral only Afebrile, improved	7-10 days [C-IV] 7-10 days [C-IV]	*Occult: usually febrile, but not septic and no major focus If ongoing fever repeat blood culture, consider other focal investigations eg lumbar puncture, chest imaging [C-IV]
	Non-occult (septic): 7-10 days [D-IV]	No oral switch	7-10 days [C-IV]	If associated pneumonia, initial IV until improvement then total 7-10 days [C-IV]
Staphylococcus aureus bacteraemia	7-14 days [D-IV]	No oral switch	MSSA: 7-14 days [D-IV] MRSA: 14 days [D-IV] Longer if persistent positive cultures or complications [D-expert opinion]	If associated endocarditis, refer to endocarditis guideline If associated osteomyelitis/septic arthritis, IV duration may be shortened to 4-7 days if improving quickly and uncomplicated, with remainder oral [C-III]
Gram-negative bacteraemia	10 days [C-III]	No oral switch	10 days [C-III] Specific bacteria: <i>Pseudomonas</i> in HSCT*: 14 days [D-IV] Non-typhoidal <i>Salmonella</i> : 7 days [D-IV]	If multi-resistant, duration is from first negative culture If associated UTI, IV duration may be shortened to 5-7 days if uncomplicated and improving quickly [D-IV], with remainder oral [D-expert opinion] *HSCT – haematopoietic stem cell transplant
Central venous catheter (CVC)-associated bacteraemia	7 days [B-III]	No oral switch	Additional duration dependent on the bacteria cultured (refer to relevant guideline)	CVC removal if blood cultures positive after 72 hours of appropriate antibiotics [B-III]. No bacteria absolutely necessitate CVC removal, but <i>Pseudomonas aeruginosa</i> and <i>S. aureus</i> have been harder to clear in some studies. *CoNS – coagulase negative staphylococci
	CoNS* in neonates, line removed, cultures cleared: 3-7 days [C-IV]	No oral switch		
Bacterial endocarditis	4-6 weeks depending on organism and antibiotic choice [C-III] (except sensitive viridans streptococci)	No oral switch	Viridans streptococci [D-IV] MIC ≤0.12mg/L: 2 weeks ¹ or 4 weeks ² MIC >0.12mg/L: 4-6 weeks <i>S. aureus</i> [D-IV] MSSA uncomplicated: 4 weeks MSSA complicated or MRSA: 6 weeks	¹ If benzylpenicillin (or ceftriaxone) + gentamicin ² If benzylpenicillin (or ceftriaxone) alone
Central nervous system infections				
Bacterial meningitis	7-21 days depending on organism [D-IV]	No oral switch [D-IV]	<i>N. meningitidis</i> : 5-7 days [B-II] <i>H. influenzae</i> : 7-10 days [C-II] <i>S. pneumoniae</i> : 10-14 days [C-II] Group B streptococci: 14-21 days [D-IV] Gram-negative bacilli: 21 days [D-IV] <i>L. monocytogenes</i> : 21 days [D-IV]	Nil
Brain abscess and subdural empyema	2-4 weeks [B-III]	Clinical improvement (afebrile, alert), CRP normal [C-III]	6 weeks [C-III]	Pus drainage if possible [B-III], ideally before antibiotics. Duration likely to be longer if no drainage [D-expert opinion] Decision to switch to oral includes antibiotic CNS penetration and adherence.

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Ventriculo-peritoneal shunt infection	Uncomplicated: 10 days [C-III] Complicated: 21 days [C-III]	No oral switch No oral switch	Uncomplicated: 10 days IV (with or without intraventricular antibiotics) Complicated: 21 days IV (with or without intraventricular antibiotics). May need longer, aiming for 7 days post CSF clearance [D-expert opinion]	Shunt removal [B-III], with alternative CSF drainage. If conservative treatment in CoNS infection, shunt should be removed if CSF not sterilized [D-expert opinion]. Complicated: multi-compartmental hydrocephalus, ventriculitis, multiple organisms, severe peritonitis or remaining prosthetic material. Intraventricular antibiotics (particularly aminoglycosides) should be avoided in neonates [A-I]
Respiratory infections				
Streptococcal pharyngitis/ tonsillitis*	0 days [A-I]	As soon as tolerated	10 days [A-I]	Duration based on using penicillin *Pharyngitis and *otitis media excluded from Lancet ID article due to space limitations and usually not IV
Peritonsillar abscess (quinsy)	1-2 days following successful drainage [C-IV]	As soon as tolerated	10 days [A-I]	Nil
Otitis media*	0 days [A-I]	As soon as tolerated	5 days if treated [A-I] More severely unwell children: up to 10 days [D-expert opinion] Tympanic membrane perforation if indigenous: ≤14 days [D-expert opinion]	Withhold antibiotics for 48 hours in most children [A-I] Consider antibiotics if symptoms persist for 48 hours (earlier in children age <6 months [D-expert opinion]) Unwell or systemic symptoms – treat immediately with antibiotics [D-expert opinion] *Otitis media excluded from Lancet ID as above
Retro-pharyngeal abscess	3-5 days for conservative or surgical management [D-IV]	Afebrile, neck mobility, tolerating oral diet [D-IV]	10-14 days [D-expert opinion]	Even if abscess is drained, IV antibiotics for surrounding tissue involvement
Mastoiditis	5 days [D-IV]	Clinical improvement	12-15 days based on clinical progress [D-expert opinion]	Longer courses may be required for intracranial complications; refer to brain abscess guideline
Acute bacterial sinusitis	0 days [C-I] Systemically unwell/high risk of suppuration: 1-2 days [D-expert opinion]	Clinical improvement	Moderate-severe: 7 days after improvement in symptoms [C-I], (usually 10-14 days [D-expert opinion])	Nil
Acute cervical lymphadenitis	0 days [D-expert opinion] Systemically unwell/rapid progression: 2-3 days [D-IV]	Clinical improvement including reduction in fever, pain and size	5-7 days [D-expert opinion]	May be longer if slow progression or abscess formation [D-IV]
Community-acquired pneumonia	0 days [A-I] Severe or complicated*: initial IV treatment [D-expert opinion]	Clinical improvement	Mild: 3 days [A-I] Moderate/severe uncomplicated: ≤7 days of antibiotics [B-I]	Oral antibiotics can be used in most children including children requiring hospital admission [A-I] If associated bacteraemia refer to the relevant guideline *Severe/complicated: O2 sats<85%, shock receiving IV bolus, immunocompromise, chronic lung/heart disease

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Ventilator-associated pneumonia	Initial treatment [D-expert opinion]	No bacteraemia, clinical improvement, tolerating orals	Good clinical response: 7 days [B-II] Non-fermentative Gram-negative bacilli in sputum: 10 days [D-expert opinion] (eg <i>Pseudomonas</i> , <i>Acintebacter</i>)	Although there is no minimum IV duration the majority of patients will start IV due to being ventilated If associated bacteraemia refer to the relevant guideline
Pleural empyema	Initial treatment [D-expert opinion]	Afebrile for 1-2 days, chest drain removed	7 days	Patients can remain febrile for several days on adequate treatment. Antibiotic duration may need to be much longer (up to 6 weeks) depending on disease severity
Lung abscess	Initial treatment [D-expert opinion]	Afebrile, clinical improvement	4-6 weeks [D-expert opinion]	Abscess >6cm: continue until resolved or cavity small and stable size [D-expert opinion]
Musculoskeletal infections				
Acute osteomyelitis	Uncomplicated: 3-4 days [A-I]	Afebrile, clinical improvement, CRP/ESR decreasing [A-II]	3-4 weeks [A-II] Complicated (delayed presentation, associated wound or abscess): longer duration IV is likely to be required [D-expert opinion]	If associated bacteraemia, initial IV but may be shortened to 4-7 days if improving quickly and uncomplicated, with remainder oral for total duration as for non-bacteraemic infection [C-III]
Subacute or chronic osteomyelitis	Clinically well and no prosthetic material: 0 days [D-expert opinion] Prosthetic material: initial treatment [D-expert opinion]	As soon as tolerated Clinical improvement [D-expert opinion]	There is no evidence to support a minimum total duration There is no evidence to support a minimum total duration	If prosthetic material is present, biofilm active antibiotics for a long duration are likely to be necessary [D-expert opinion]. Cure may not be possible without prosthetic material removal
Septic arthritis	2-4 days [A-II]	Afebrile, clinical improvement, CRP/ESR decreasing [A-II]	2-3 weeks [A-II] Complicated (delayed presentation, associated wound or abscess): longer duration IV is likely to be required [D-expert opinion]	If associated bacteraemia, initial IV but may be shortened to 4-7 days if improving quickly and uncomplicated, with remainder oral for total duration as for non-bacteraemic infection [C-III]
Pyomyositis	2-5 days [C-IV]	Clinical improvement	2-3 weeks [C-IV]	Pus should be drained [C-IV]
Skin and soft tissue infections				
Cellulitis	Mild: 0 days Moderate/severe*: 1-3 days [C-IV]	Clinical improvement – fever and erythema reduction	5-7 days [C-IV]	If associated deep infection or osteomyelitis, refer to the relevant guideline *Moderate/severe: rapidly spreading erythema, tender, lymphangitis, systemic features
Preseptal (periorbital) cellulitis	2-3 days [C-IV]	Clinical improvement in fever and erythema	7-10 days [C-IV]	Nil
Orbital cellulitis	3-4 days [C-IV]	Clinical resolution of fever, erythema and pain	7-10 days [C-IV]	Intra-orbital abscesses should be drained, with non-operative management in selected patients [C-IV]. If symptoms persist IV antibiotics should continue while investigating for complications [D-expert opinion]

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Skin abscesses and boils	If effectively drained: 0 days [B-II]	As soon as tolerated	0 days [B-II]	If associated cellulitis, refer to the relevant guideline Treatment recommendations unaffected by abscess size
Superficial surgical site infection	0 days [B-II]	As soon as tolerated	If started, 5-7 days [D-expert opinion]	Local wound management and delay starting antibiotics, especially if symptoms occur within 48 hours post surgery [B-II]
Deep surgical site infection	No prosthetic material: initial treatment [B-III] Prosthetic material: 4-6 weeks [D-expert opinion]	No oral switch if short duration Clinical improvement	No minimum recommendation, duration dependent on clinical improvement If prosthetic material present, very prolonged antibiotics may be necessary [D-expert opinion]	The wound should be surgically debrided [B-III] Mediastinitis may be treatable with shorter than 4-6 weeks but there is insufficient evidence to recommend this Prosthetic material should be removed if possible.
Abdominopelvic infections				
Appendicitis – uncomplicated	Single pre-operative dose [A-I]	No oral switch	Single pre-operative dose only [A-I]	Surgical prophylaxis only Non-operative antibiotic management has been used but studies are too small to recommend this approach
Appendicitis – complicated, intra-abdominal infection	Initial treatment [B-III]	Clinical improvement, normal bowel function [B-III]	3-7 days [B-III] – stop when signs of infection have resolved [B-III]	Complicated: perforation, peritonitis, pus in peritoneum Antibiotics do not need to be changed based on culture results if improving [B-III]
Acute cholangitis	Initial treatment [C-III]	No recommendation	No minimum duration, depends on clinical improvement [D-expert opinion]	If there is accompanying bacteraemia refer to the relevant guideline
Pancreatitis	Prevention of infection: 0 days [C-I] Treatment of infection: initial treatment [C-IV]	Not applicable No recommendation	0 days [C-I] No minimum duration, dependent on clinical improvement [D-expert opinion]	The only evidence for antibiotic use in pancreatitis in children is for treatment of established infection If complications of bacteraemia or pneumonia occur refer to the relevant guideline
Necrotising enterocolitis	7-10 days [C-IV]	No oral switch	7-10 days [D-expert opinion] with further duration if lack of clinical improvement	Antibiotics can be discontinued after 2-3 days if NEC is considered unlikely [D-expert opinion]
Genitourinary infections				
Lower urinary tract infection (UTI)	0 days Age <3m: initial treatment	Clinical improvement	3-4 days [A-I]	If associated bacteraemia, refer to bacteraemia guideline
Pyelonephritis	0 days [A-I] Age <3m or not tolerating orals: initial treatment	Clinical improvement, or as soon as tolerating orals	10 days [A-I] In a child who rapidly improves 7 days may be sufficient [D-expert opinion]	If associated bacteraemia, refer to bacteraemia guideline
Epididymitis	0 days	Clinical improvement	Negative urinalysis: no antibiotic [C-III] Positive urinalysis: oral antibiotic [B-III] for 2 weeks [D-expert opinion]	Nil