

Neonatal Antibiotic/ Antifungal Choice

**Adapted from Oxford NICU guideline
For use at Wexham Park Hospital only**

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This guideline has been registered with the trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt, contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

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Antibiotic Choice

Clinical scenario	Antibiotic/s & notes
Early Onset Sepsis (EOS; first 48 hours of life)	Benzyl penicillin & gentamicin
Early Onset Sepsis & mother recently arrived from country with high antibiotic resistance prevalence	Benzyl penicillin & amikacin
EOS & meningitis (or can't rule out meningitis)	Cefotaxime & amoxicillin (stop amoxicillin at 36 hrs if listeria is <u>not</u> isolated from neonatal or maternal cultures)
Life-threatening deterioration in first 48 hours of life**	Meropenem
Late Onset Sepsis (LOS; after 48 hours old)*	Flucloxacillin & amikacin
Ventilator Associated Pneumonia (VAP) [see definition and criteria in extreme preterm sepsis guideline]	Augmentin plus single dose amikacin (rationalise antibiotics depending on BAL sensitivities)
NEC	Amoxicillin, amikacin & metronidazole
Proven CoNS infection	Vancomycin
LOS: life threatening** or meningitis not excluded <i>**e.g. needing 2 inotropes</i>	Meropenem & vancomycin. Rationalise to cephalosporin or ciprofloxacin when sensitivities known

*In early onset sepsis, in a baby who is clinically improving, do not escalate to meropenem solely based on a CRP rise on the 2nd day of life (CRP peaks 36 hours after the start of an infection).

*Consider sensitivities on recent cultures e.g. ESBL colonisation & discuss with PID team choice of antibiotics if deterioration within 48-72 hours of stopping previous course of antibiotics.

Antifungal prophylaxis and treatment choice

Prophylaxis

Babies at high risk for fungal infection should receive antifungal prophylaxis.

- Babies <27 wks gestation
- Babies on broad spectrum antibiotics (i.e. vancomycin and cefotaxime, or meropenem; vancomycin or cefotaxime alone for >1 week)
 - If tolerating feeds (0.5 ml milk hourly) give oral nystatin
 - If not tolerating feeds, give iv fluconazole prophylaxis
 - Change from fluconazole to nystatin once fed

Treatment

Intravenous fluconazole is the agent of choice for antifungal treatment. Use it in the following scenarios:

- **Babies with proven/suspected invasive candida disease**
 - Even a single candida positive blood culture/any positive blood culture is significant
- **Extreme preterm babies with a skin rash that is clinically suspicious of candida**
 - Give iv Fluconazole treatment initially; change to oral when improving

Consider empiric fluconazole treatment in the following scenarios:

- Persistent thrombocytopenia despite broad-spectrum antibiotics
- Lack of improvement or deterioration in a baby who has been on antibiotics for several days
- Candida grown from urine

Before starting treatment, take 2 more blood cultures, in addition to any that have already been taken. Request an ophthalmological examination, urine microscopy for fungal hyphae and a renal USS.

Consider **ambisone**, in place of fluconazole, if deterioration continues despite fluconazole treatment (or when a non-albicans species is cultured; Germ-tube –ve strain).

Duration:

Treat definite fungal sepsis for 3-4 weeks. If anti-fungal therapy commenced empirically without ever culturing candida from a sterile site then consider stopping anti-fungal therapy when the baby is getting better, usually when antibiotics stop.

References

1. American Academy of Paediatrics guidelines: in Pickering LK, ed. 2012 Red Book: Report of the Committee on Infectious Diseases. 29th ed. Elk Grove Village, IL: AAP.
2. Rios J et al. Fluconazole prophylaxis in preterm infants: a systematic review. Braz J Infect Dis. 2017; 21:333-338.
3. Aliaga S et al. Changes in the Incidence of Candidiasis in Neonatal Intensive Care Units. Pediatrics 2014; 133: 236-242.