

Guideline for the NICU Evaluation of Late-Onset Sepsis

This guideline addresses the evaluation of NICU infants for hospital-acquired infection (also referred to as late-onset sepsis or nosocomial sepsis, occurring at > 72 hours of age.)

The goals of this guideline are to ensure the accurate diagnosis of infection; and to reduce the cumulative use of vancomycin in the NICU, reserving this antibiotic for clinical situations in which an identified organism and antibiotic sensitivities require that it be used.

The antibiotic recommendations in this guideline do not apply in two specific scenarios:

- When an infant has suddenly and inexplicably become severely ill, the empiric use of vancomycin in combination with other agents is warranted and left to the discretion of the individual neonatologist
- When an infant is known to be colonized with MRSA, vancomycin must be included in the initial empiric treatment of presumed infection

For all other times when the clinician is evaluating a NICU infant for infection, the following guidelines should be followed:

(1) Obtain CBC/differential, blood cultures and strongly consider obtaining CSF culture. Begin therapy with nafcillin and gentamicin.

Note: consider urinalysis & urine culture in the initial evaluation on an individual case basis. Urine culture may be particularly important when evaluating older infants without central lines. Urine for culture should be obtained by sterile catheter or by suprapubic aspirate.

(2) If the original blood cultures are no growth at 48 hrs:

- consider d/c antibiotics
- if the infant is clinically improved and the clinicians feel that empiric coverage for sepsis is warranted, then continue with nafcillin and gentamicin
- if the infant is not clinically improved or deteriorating, obtain a second set of blood cultures, obtain CSF culture and switch to vancomycin and gentamicin on an empiric basis
- if the second set of blood cultures are also no growth - again consider d/c antibiotics

(3) If the original blood culture grows gram-positive cocci in clusters:

- draw a second set of blood cultures, obtain CSF culture (if not already done) then add vancomycin to the current therapy with nafcillin and gentamicin
- type and duration of therapy should be dictated by the final ID and sensitivity data on the organism, and by clinical circumstances. In most cases, therapy can be narrowed to one or two antibiotics.
- if one or more of first set of blood cultures is identified as CONS; and the second set of blood cultures and CSF culture are all no growth - consider d/c all antibiotics, on the basis that the initial positive blood culture likely represents contamination or transient bacteremia

(4) If the original blood culture grows any other organism that is not covered by nafcillin/gentamicin, then obtain CSF culture, and change antibiotics and treat as is recommended for the individual organism.