

## Prompt Administration of Antimicrobials

For patients with Sepsis with organ dysfunction, ***cultures and antibiotic administration should be considered equal in emergent importance to intubation and vasopressors.***

For every hour of delay between the onset of hypotension and the administration of antimicrobials (defined as the “right” antimicrobial being “in the patient”), mortality rates rise. *The goal for antibiotic administration is 30-60 minutes from the onset of hypotension to administration.*

If a patient is in shock, one nurse cannot resuscitate the patient according to expected standards. Help is needed. Think of the resuscitation of a patient with Sepsis and organ dysfunction as requiring the same team approach as trauma resuscitation or STEMI.

Ask for or offer help based on what is needed. For example, while airway and circulation are addressed, one colleague can obtain cultures while another obtains antimicrobials. Team work is necessary to ensure resuscitation goals are achieved.

Culture everything you can quickly; but do not delay antimicrobials if cultures cannot be obtained right away. **Do not wait for lines to be inserted to do cultures or start antibiotics.** Obtain peripheral cultures in the absence of an indwelling line and always administer the first dose of antimicrobials STAT.

Loading doses are the same for patients with renal failure; pharmacy can be consulted regarding the dose and frequency of subsequent doses.

To reduce the time for antibiotic administration, administer drugs that have a beta lactam ring first, and give them quickly. Beta lactam antibiotics inhibit bacterial cell wall synthesis and include penicillins, cephalosporins and “penems” (imipenem, meropenem). These drugs can be given in a minimal volume within minutes. Piperacillin should be given over 30 minutes.

Hang antibiotics that require longer administration time next. These drugs require slower administration to avoid potential ototoxicity, nephrotoxicity or neurotoxicity from high peak serum rises and include:

- a. Cipro (give over 30 minutes centrally; 60 minutes peripherally due to vein irritation)
- b. Levofloxacin (give over 60 minutes if < 500 mg or over 90 minutes if > 500 mg).
- c. Metronidazole (give over 30 minutes)
- d. Vancomycin, tobramycin, gentamycin (give over 60 minutes)

If the patient has more than one IV site, different antibiotics can be administered simultaneously; just administer each antibiotic via a different site.

Do not delay starting antibiotics to get onto “regular dosing schedules”; first dose is always STAT. Times can be staggered over the next day or two if required.

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