PRACTICE GUIDELINE

Effective Date: 6-18-04 Manual Reference: **Deaconess Trauma Services**

TITLE: EMPIRIC ANTIBIOTICS FOR TRAUMA PATIENTS AND CRITICAL CARE PATIENTS

PURPOSE: To define the appropriate use of "empiric antibiotics" in the multiply injured and critically ill patients.

GUIDELINES:

1. The following chart shows suggested "empiric treatment" for potential Infections encountered in the trauma patient.
2. Empiric therapy should be administered for a maximum of three days.
3. Antibiotics should then, if not sooner, then be reassessed according to possible source of infection, any culture results or antibiotic sensitivities.
4. The numbers are in order of preference based on efficacy, toxicity (including resistance concerns) and cost.
5. Refer to chart below for specific antibiotic therapy.

REFERENCES:

- Hospital Policy and Procedure Manual, HOSPITAL ACQUIRED PNEUMONIA.
- INFECTIOUS DISEASE SOCIETY OF AMERICA GUIDELINES, 2000.

REVIEWED DATE	REVISED DATE
JAN 05	**JAN 08**
JAN 06	
JAN 07	

Abdominal Infections		
Secondary Bacterial Peritonitis (e.g., perforated/gangrenous appendix, IBD, SOB, salpingitis, necrotizing pancreatitis, leakage from GI anastamosis, mesenteric ischemia, ruptured intestines)	Escherichis coli, Klebsiella species, Proteus, anaerobes including Bacteroides fragilis	1) ampicillin sodium/sulbactum sodium 2) ceftriaxone + metronidazole 3) gentamicin + metronidazole (above + ampicillin if biliary tract)
General Abdominal Abscess (s/p surgical treatment w/drainage)	See above	1) ampicillin sodium/sulbactum sodium 2) ceftriaxone + metronidazole 3) gentamicin + metronidazole
Acute Cholecystitis with possible perforation or gangrene, Cholangitis	Escherichia coli, Klebsiella species Enterococcus, Anaerobes	1) ceftriaxone + metronidazole 2) gentamicin + metronidazole (above ± ampicillin)
Pneumonia		
Hospital-Acquired Pneumonia	P. aeruginosa, Enterobacteraciae, Staphylococcus aureus If =48 hours since admission	Antipseudomonal penicillin: pipercillin, zosyn, cefepime, ceftazidime, aztreonam or carpapenem (imipenem) + A fluoroquinolone (Levaquin) OR Aminoglycoside (Tobramycin). ACCEPTABLE TREATMENTS: Zosyn + Tobramycin +/- Vancomycin Zosyn + Levaquin +/- Vancomycin Imipenem + Tobramycin +/- Vancomycin Imipenem + Levaquin +/- Vancomycin (above ± empiric vancomycin if severely ill and Staph expected)
Aspiration Pneumonia (on admission to hospital)	oral flora, including gram positives and anaerobes	Clindamycin
Miscellaneous		
Cellulitis	Group A Streptococcus, Staphylococcus aureus	1) nafcillin or cefazolin
Necrotizing Fasciitis	Streptococcus species, mixed aerobic and anaerobic (including Clostridium) species	Penicillin + gentamicin + clindamycin (may substitute ceftazidime for gentamicin if toxicity concerns)
Orofacial Trauma	Streptococcus species, Staphylococcus aureus, less commonly gram negative rods	1) clindamycin ± gentamicin 2) cefazolin + metronidazole ± gentamicin 3) ceftriaxone + metronidazole
Staphylococcus aureus (coagulase positive) in blood	Staphylococcus aureus (10% methicillin-resistant Staphylococcus aureus, i.e., MRSA)	1) nafcilliln or cefazolin 2) vancomycin especially if patient severely ill ± multiple prior antibiotics ± lengthy hospital stay (consider changing all lines)
Staphylococcus epidermidis (coagulase negative) in blood	Staphylococcus Epidermidis (45% Methicillin-resistant Staphylococcus Epidermidis, i.e., MRSE)	1) No antibiotics if only one blood culture grows (contamination likely) and not severely ill 2) vancomycin if >1 culture ± presentation suggests infection (consider changing all lines)
Clostridium difficile Colitis	----------	1) metronidazole PO (IV if PO not possible 2) vancomycin PO (may promote vancomycin- resistant organisms)
Switch to PO Meds		
Abdominal	Escherichi coli, Klebsiella, anaerobes including Bacteroides fragilis	1) amoxicillin/clavulanate (if mild illness) 2) ciprofloxacin + metronidazole

Dosing for Commonly Used Antibiotics (IV unless otherwise specified):

Amox/Clavulanate 875 mg po BID*
Ampicillin 1 g Q 6**
Ampicillin sodium/sulbactum sodium 3 g IV Q6
Aztreonam 1 g Q8**
Cefazolin (1st) 1 g Q8**
Cefoxitin (2nd) 1 q Q6**

Ceftazidime (3rd) 1 g Q8**
Ceftriaxone (3rd) 1 g Q24*
Levaquin 500 mg IV/po Q day

Clindamycin 600-900 mg Q8**
Erythromycin 500 mg Q6*

Flagyl 500 mg Q8*
(250-500 mg po TID)
Gentamicin 7 mg/kg Q24**
Nafcillin 1 g Q4-6*
Tobramycin 7 mg/kg Q24**
Trovafloxin 100-200 mg po QD
Vancomycin 1 g Q12**

*renally eliminated drug, may require dose adjustment if patient >65 years or S Cr>1,5; also, note that once daily dosing of aminoglycosides may not be appropriate for patients expected to have unusually rapid (e.g., young trauma patient) or slow (elderly patient with renal impairment) elimination of the drug despite “normal” serum creatinine determinations; suggest contacting pharmacist on team or on-call pharmacist for assistance with such case.