Northwestern Memorial Hospital

SUGGESTED EMPIRIC ANTIMICROBIAL THERAPY BY SITE OF INFECTION

Empiric antimicrobial guidelines are based on the most likely organisms responsible for infection, NMH susceptibilities, and prevalence of resistant organisms. Therapy may need to be adjusted once identification and susceptibility are determined.

Previous antimicrobial therapy may affect the susceptibility of organisms that subsequently cause infection. Close attention should be given to courses of antimicrobial therapy administered to patients in the recent past. In many cases, obtaining the appropriate specimen(s) before antibiotics are started is critical to successful outcomes of an infectious disease. Alterations in empiric antimicrobial therapy may be required.

Anatomic site /diagnosis	Common Pathogens	Preferred therapy	Alternative**	Comments
SEPSIS or ACUTE FEBRILE SYNDROME				
Septic shock	*S. aureus* (MSSA and MRSA), *E. coli*, Enterobacteriaceae	vancomycin + cefepime + amikacin	vancomycin + aztreonam + amikacin (severe, confirmed beta-lactam allergy)	See guidelines from Surviving Sepsis Campaign. Surviving Sepsis Guidelines Consider adding empiric doxycycline, particularly if recent exposure to woodlands, ticks, or developing countries.
Septic shock--post splenectomy	*S. pneumoniae, N. meningitidis, H. influenzae* , Capnocytophaga spp.	ceftriaxone + vancomycin	levofloxacin + vancomycin (severe, confirmed beta-lactam allergy)	
Toxic shock syndrome	S. aureus (MSSA and MRSA), group A Streptococcus	vancomycin + clindamycin + penicillin G		Strongly recommend prompt surgical evaluation for possible debridement and infectious diseases consultation.
Not neutropenic, no hypotension, source unclear	*S. aureus* (MSSA and MRSA), Streptococcus spp., *E. coli*	vancomycin + ceftriaxone		Consider adding empiric doxycycline, particularly if recent exposure to woodlands, ticks, or developing countries.

** Severe allergy to Preferred Therapy only

Not neutropenic, no hypotension, suspect intraabdominal source with mild to moderate severity	Enterobacteriaceae	Ceftriaxone + metronidazole	aztreonam + metronidazole + vancomycin (severe, confirmed beta-lactam allergy)	For patients with sepsis of high severity, see recommendations under Septic Shock.
Not neutropenic, no hypotension, petechial rash	*S. pneumoniae, N. meningitidis*	ceftriaxone + vancomycin		Consider adding empiric doxycycline, particularly if recent exposure to woodlands, ticks, or developing countries.
Not neutropenic, no hypotension, suspect urinary source	Enterobacteriaceae, Enterococcus spp.	piperacillin/tazobactam	aztreonam	
Fever & neutropenia (no hypotension, no apparent source) in a cancer patient receiving chemotherapy	Enterobacteriaceae, *Pseudomonas aeruginosa*.	cefepime	vancomycin + aztreonam (severe, confirmed beta-lactam allergy)	Empiric vancomycin is unnecessary unless patient is hemodynamically unstable, has pneumonia or PCN allergy, severe mucositis, or there is evidence of catheter-related infection on exam. Discontinue vancomycin after 72 hours if started for suspected or confirmed gram-positive bacteremia that was later identified as non-MRSA or as a single isolate of coagulase negative staphylococcus. See IDSA guidelines for neutropenic fever: IDSA Neutropenic Fever Guidelines

Fever & neutropenia -- febrile longer than 96 hours	as above (fever & neutropenia) + fungal infection	add micafungin		Micafungin has broad coverage for Candida spp. It is not the preferred antifungal agent for all cancer patients, however, as this drug does not treat Aspergillus spp. or Mucor spp. High risk cancer patients are considered at increased risk of mold infections. For more information, see: IDSA Neutropenic Fever Guidelines