

Neutropenic Fever Guidelines

This order set helps to prescribe both prophylaxis and/or initial treatment of febrile neutropenia.

1-In the order set VT, select “Antibiotics for neutropenia” or “Febrile Neutropenia Antibiotics”

2-For initial antibiotics for Febrile Neutropenia, answer the following questions: (use the “Bugs & Drugs” viewer or Micro results tab to check past cultures for your patient.

- a. Does your patient have history of ESBL (bacteria identified in culture results as “ESBL Producing”)?
- b. Does your patient have severe sepsis?
- c. Does your patient have either catheter related bloodstream infection or evidence of skin or soft tissue infection?
- d. Does your patient have VRE colonization?

3-After answering these questions, you will be guided to your initial antibiotic selection

If you answered no, to all of the following you will be asked to determine if cefepime or piperacillin/tazobactam is the preferred agent.

4-If fever recurs or persists at 72-96 hours, consider empiric antifungal therapy with micafungin 100 mg IV daily.

5- For fevers persisting after empiric micafungin therapy, consider ID consult or page CAUSE for recommendations.

Initial questions	Suggested antibiotics	Explanation
Febrile neutropenia(FN) with no risk factors	Cefepime or piperacillin/tazobactam (Pip/tazo)	<p>Piperacillin/tazobactam preferred if one or more of the following present:</p> <ul style="list-style-type: none"> - patient is VRE colonized - current duration of neutropenia is < 2 weeks - patient is experiencing severe mucositis or typhlitis <p>Cefepime preferred if one or more of the following present:</p> <ul style="list-style-type: none"> - current duration of neutropenia is > 2 weeks - patient has mild to moderate hypersensitivity to penicillin, e.g. rash <p>If severe penicillin allergy (e.g. urticaria, anaphylaxis, or SJS/TEN): The complexity of allergic reactions makes treatment decisions difficult. Such decisions should be patient-specific, taking into consideration reported history, likely pathogens, and severity of illness. Soliciting input from an Infectious Disease or CAUSE clinician is advised.</p>
FN with suspected catheter related bloodstream infection or skin and soft tissue infection	Cefepime or Pip/tazo with vancomycin	Dosing recommendations will be provided in the next screen
FN with severe sepsis	Cefepime or Pip/tazo with vancomycin and aminoglycoside	Dosing recommendations for vancomycin and tobramycin will be provided in the next screen
FN with severe sepsis and history of VRE	Linezolid will replace vancomycin	If a patient has severe sepsis and is VRE colonized, linezolid will be part of the recommended antibiotic regimen. However, linezolid should be discontinued if current blood cultures are negative for VRE at 48 hours due to risk of bone marrow suppression.
FN with history of ESBL	Doripenem in place of cefepime or pip/tazo	Some Klebsiella and E coli produce extended-spectrum beta-lactamase (ESBL). These bacteria are resistant to most beta-lactam antibiotics, including advanced-generation cephalosporins and pip/tazo. However, ESBLs do not hydrolyze carbapenems, such as doripenem.

General Dosing Information

CrCL= (140-Age) x ideal body weight/(SCr x 72) (female patients take 85% of total)

Antibiotic	Oncology Dose	Modification Needed
Ciprofloxacin	750 mg PO q12h If unable to tolerate oral medication, 400 mg IV q12h	CrCl ² < 30 ml/min---400 mg IV q24h 200 mg PO q12h
Moxifloxacin	400 mg PO/IV q24h	No adjustment necessary for renal dysfunction
Cefepime	CrCl > 50 mL/min 2 gm IV q8h	CrCl 30-50 ml/min---2 gm IV q12h CrCl 10-30 ml/min---2 gm IV q24h
Metronidazole	500 mg PO/IV q6h	No adjustment necessary for renal dysfunction
Vancomycin	See CareCast for dosing based on weight and renal function	See CareCast for dosing based on weight and renal function
doripenem	500 mg IV q8h; 1 hour load then 4 hour infusions	All doses should be given over 1 hour CrCl 30-50 ml/min- 250 mg IV q8h CrCl 10-29 ml/min-250 mg IV 12h CrCl < 10 ml/min-250 mg IV q24h
Aztreonam	2 gm IV q6h	CrCl < 50 ml/min-1 gm IV q6h
Amphotericin B	1 mg/kg IV daily	
Amphotericin B lipid complex	5 mg/kg IV daily	
Micafungin	100 mg IV daily	No adjustment necessary for renal or liver dysfunction
Voriconazole	6 mg/kg PO/IV q 12h x 2 doses, 4 mg/kg PO/IV q12h x 7 days then 200 mg PO bid x 11 weeks	Avoid IV voriconazole if CrCr < 30 ml/min and consider ID consult

Other Drugs Used

Amikacin	If CrCl is > 60 ml/min, 21 mg/kg IV loading dose (round dose to 50 mg) Consult pharmacy for obese patients and those with CrCl < 60 ml/min	Obtain random level 6-14 after the first dose and adjust according to nomogram. When CrCl < 60 ml/min, use standard dosing with pharmacy assistance
Gentamicin/ tobramycin	7 mg/kg IV q24h for normal renal function (round dose to 10 mg) Consult pharmacy for obese patients	Obtain random level 6-14 after the first dose and adjust according to nomogram. When CrCl < 60 ml/min, use standard dosing with pharmacy assistance
Piperacillin/ tazobactam	4.5 gm IV q6h	CrCl 10-50 ml/min—4.5 gm IV q8h
Clindamycin	900 mg IV q8h	No adjustment necessary for renal dysfunction