

FEBRILE NEUTROPENIA = FEVER + NEUTROPENIA	
Fever	<ul style="list-style-type: none"> Oral temperature $\geq 38.3^{\circ}\text{C}$ Oral temperature $> 38^{\circ}\text{C}$ for ≥ 1 hour
Neutropenia	<ul style="list-style-type: none"> Absolute neutrophil Count (ANC) $< 0.5 \times 10^9/\text{L}$ ANC $< 1 \times 10^9/\text{L}$ and expected to fall $< 0.5 \times 10^9/\text{L}$ in the next 48 hours

RISK FACTORS FOR NEUTROPENIA: for exam only know patient factors		
Patients Factors	Disease Factors	Treatment Factors
<ul style="list-style-type: none"> Age ≥ 65 yrs Female Abnormal baseline labs Poor nutrition status Co-morbidity Poor performance status 	<ul style="list-style-type: none"> Tumor type Advanced stage Genotype 	<ul style="list-style-type: none"> Chemotherapy regimen Neutropenia prophylaxis

EMPIRIC ANTIBIOTIC REGIMEN: treat gram positive and gram negative		
Low Risk Patients (PO)	Empiric antibiotic regimen	Amoxicillin/clavulanate 875 mg po bid + ciprofloxacin 750 mg bid x 7 days
	If Penicillin allergy	Clindamycin 300 mg po qid + ciprofloxacin 750 mg po bid x 7 days
	Monitoring	<ul style="list-style-type: none"> 4 hour observation prior to discharge home 24-48 hour post discharge follow-up
High Risk Patients (IV)	Empiric antibiotic regimen	<ul style="list-style-type: none"> Piperacillin/tazobactam 3.375-4.5 g IV q6h Pseudomonas = 4.5 g
	If Penicillin allergy	<ul style="list-style-type: none"> Cefepime 2 g IV q8h Imipenem 500 mg IV q6h Meropenem 500 mg IV q6h
	If B-lactam anaphylaxis	<ul style="list-style-type: none"> Vancomycin 15 mg/kg IV q12h + ciprofloxacin 400 mg IV q12h
	Monitoring	<ul style="list-style-type: none"> Vital signs q6h and prn: temp, HR, RR, BP, peripheral O_2 sat CBC + diff, chemistry panel Blood + other cultures
Vancomycin Indication		<ul style="list-style-type: none"> Hemodynamically unstable Colonization with MRSA Positive blood culture for gram +ve organism Serious catheter-related infection Skin or soft issue infection Radiographically documented pneumonia Severe mucositis

EMPIRIC ANTIFUNGAL REGIMEN:		
<ul style="list-style-type: none"> Clinical consideration: persistent or recurrent fever after 4-7 days of broad-spectrum antibiotics with expected overall duration of neutropenia > 7 days 		
Invasive Aspergillosis	Therapy	<ul style="list-style-type: none"> Voriconazole 6 mg/kg IV q12h x 1 day, then 4 mg/kg IV q12h Micafungin 100 mg IV daily
	Duration	Until clinical/radiographic resolution
Candidemia	Therapy	<ul style="list-style-type: none"> Fluconazole 800 mg (12 mg/kg) IV load + 400 mg (6 mg/kg) IV daily Micafungin 100 mg IV daily
	Duration	Minimum 14 days after first -ve blood culture and resolution of S/S

ANTIVIRAL REGIMEN:		
HSV	Mucocutaneous	<ul style="list-style-type: none"> Acyclovir 5 mg/kg IV q8h Acyclovir 400 mg PO 5x/day Valacyclovir 500 mg – 1 g PO bid x 7-10 days
	Encephalitis	<ul style="list-style-type: none"> Acyclovir 10 mg/kg IV q8h x 14-21 days
VZV	<ul style="list-style-type: none"> Acyclovir 10 mg/kg IV q8h Acyclovir 800 mg po 5x/day Valacyclovir 1 g po tid x 7-10 days 	

MASCC RISK INDEX: provided on exam	
Characteristics	Wt
Burden of febrile neutropenia	
<ul style="list-style-type: none"> No or mild symptoms Moderate symptoms Severe symptoms 	5 3 0
No hypotension (SBP > 90 mm Hg)	5
No COPD	4
Solid tumor or hematological malignancy with no previous fungal infection	4
No dehydration requiring parenteral fluids	3
Outpatient status at onset of febrile neutropenia	3
Age < 60 years	2

LOW RISK ≥ 21 HIGH RISK < 21

WHAT IS MISSING FROM MASCC RISK FACTORS?	
<ul style="list-style-type: none"> Availability of home caregiver Access to telephone Language barrier Transportation to hospital Distance to hospital Tolerating oral intake (foods, fluids, medications) Reliability 	

GSF:	
Class	Hematopoietic growth factor
MOA	Stimulate the production, maturation and activation of neutrophils
Onset	1-2 days
ADRs	Bone pain (lower back and hips)
Ex//	Filgrastim 5 mcg/kg SC until ANC $> 1 \times 10^8/\text{L}$ post-neraidr
	<ul style="list-style-type: none"> Special authority for coverage
	Peg-Filgrastim 6 mg SC per chemotherapy cycle
	<ul style="list-style-type: none"> No Pharmacare coverage

INDICATIONS:	
Primary prophylactic use	<ul style="list-style-type: none"> Risk for febrile neutropenia $\geq 20\%$ Dose dense chemotherapy regimen
Secondary prophylactic use	<ul style="list-style-type: none"> Neutropenic complication from a previous cycle of chemotherapy
Routine use	<ul style="list-style-type: none"> Not recommended for afebrile neutropenia Not recommended for febrile neutropenia, UNLESS high risk for infection-related complications

HIGH RISK FACTORS FOR INFEXN COMPLICATIONS:	
<ul style="list-style-type: none"> Sepsis syndrome Age > 65 Profound neutropenia (ANC $< 0.1 \times 10^9/\text{L}$) Prolonged neutropenia (> 10 days) Pneumonia Invasive fungal infection Hospitalization at time of fever Prior episode of febrile neutropenia Uncontrolled primary disease 	