Febrile Neutropenia Oncology Care Guideline

Inclusion Criteria:
- Temp >38.3 C orally or > 38.0 C for longer than 1hr, ANC < 500 cells/mm³ OR
- ANC < 1000 cells/mm³ with a predicted decline to 500 cells/mm³ or less over the next 48 hrs

Exclusion Criteria: BMT recipient

Assessment
- Comprehensive H & P for subtle signs/symptoms, including pain at sites most commonly infected
- Vital signs, continuous pulse oximetry if respiratory signs/symptoms

Recommendations/Considerations
- Thoroughly assess common sites of infection: GI tract, groin, skin, lungs, sinuses, ears, perineum, perirectum, intravascular access sites.
- Consider stress doses of IV steroids for hypotension if currently receiving steroids or was recently tapered off steroids.
- Administer antibiotics within 1 hour of arrival.
- Central vascular access device care should be performed per CHOC protocol (Mosby – CVAD).

Interventions
- CBC with differential, CMP
- Blood cultures from each CVAD lumen/port, urinalysis & urine c/s (no cath) for UTI symptoms, stool for C. difficile for GI symptoms, VRP if URI signs/symptoms
- Blood culture q 24 hours while febrile
- CXR if respiratory signs/symptoms; chest CT if abnormal
- Abd ultrasound or CT for abdominal pain
- Heparin flush CVAD per protocol
- Assess CVAD site for presence of infection & perform dressing change within 4 hours of admission

Antibiotics – Hemodynamically Stable
cefepime 50 mg/dose IV q8hr (<40kg) (Max: 2 gm/dose) OR aztreonam 50 mg/kg/dose IV q 6 hrs (Max: 2 gm/dose) if allergic to cephalosporins

IF indications for empiric vancomycin present - ADD
vancomycin 15 mg/kg/dose IV q 6 hrs x 72 hrs (if ≤ 50kg) OR 1000 mg IV q 8h x 72 hrs (if > 50 kg)

IF typhlitis or C. difficile is suspected – ADD metronidazole 7.5 mg/kg/dose IV or PO q 6hrs (Max: 2 gm/day)

Antibiotics - Hemodynamically Unstable
(requires fluid boluses or pressors)
meropenem 40mg/kg/dose IV q 8hrs (Max: 2 gm/dose) AND
vancomycin (x 72hrs) 15 mg/kg/dose IV q 6 hrs if ≤ 50kg or 1000 mg IV q 8h if > 50 kg

IF C. difficile is suspected – ADD metronidazole 7.5 mg/kg/dose IV or PO q 6hrs (Max: 2 gm/day)

Continued Considerations
- Adjust antibiotics based on culture results, clinical course and serum levels.
- Consider Vancomycin levels after 48-72 hours
- Perform daily site specific exam, review of lab tests & cultures, response to therapy (fever trends & signs/symptoms of infection)
- Evaluate drug toxicity including end-organ toxicity (LFTs/renal function tests 2x/wk)
- For follow up therapy, duration algorithms & discharge criteria, see page 2.

Indications for Empiric Vancomycin Use:
- Blood culture positive for Gram positive bacteria prior to final ID & susceptibility testing
- Known colonization with penicillin/cephalosporin resistant pneumococci or MRSA
- Hypotension or septic shock w/o an identified pathogen
- Received high dose cytarabine recently
- AML
- Soft tissue infection
- Mucositis
- Suspected meningitis
- Cephalosporin allergic

Vancomycin Trough Targets
- Staph aureus: 15 – 20 mCg/mL
- Staph epi: 10 – 15 mCg/mL
- No Vancomycin levels in the first 48 to 72 hours unless clinically indicated

Patient/Family Education
- Review fever guidelines & temperature monitoring
- Review S&S infection
- Review handwashing

Reassess the appropriateness of Care Guidelines as condition changes and 24 hours after admission. This guideline is a tool to aid in clinical decision making. It is not a standard of care. The physician should deviate from the guideline when clinical judgment so indicates.

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Evaluate overall response to empiric therapy in 2-5 days

Responding
- Afebrile
- Signs/symptoms stable or improving

Documented infection
- Adjust antibiotics based on sensitivities
- D/C vancomycin if no positive culture for Gram positive organisms

No positive culture
- Continue same antibiotic course until neutropenia resolving (ANC 250-500)
  OR
- Discontinue antibiotics after 7-14 days if remains stable (ANC <250)
- Reassess indication for continued use of vancomycin

Discontinue antibiotics when afebrile x 48 hrs

Not Responding/Persistent Fever
- Adjust antibiotics based on sensitivities
- D/C vancomycin if no positive culture for Gram positive organisms

Unstable
- Consider ID Consult
- Daily reassessment of signs/symptoms and culture results
- Consider imaging

Stable
- Add empiric fluconazole
- If fever > 5 days, consider addition of mold active agent

Suggested Duration of Therapy
- Bloodstream infection (uncomplicated)
  - Gram-negative: min 10 days after 1st neg culture
  - Gram-positive: min 10 days after 1st neg culture
  - S. aureus: min 14 days after 1st negative blood culture
- ID Consult & catheter removal for BSI with Candida, Pseudomonas aeruginosa, atypical mycobacteria, molds, Stenotrophomonas maltophilia
- Consider catheter removal for BSI with S. aureus, Corynebacterium jeikium, Acinetobacter, Bacillus organisms, and VRE
- Sinusitis: 21 days
- Bacterial pneumonia: minimum 14 days
- Catheter removal for septic phlebitis, tunnel infection, or port pocket infection

Discharge Criteria
- Afebrile, vital signs stable x 24-48 hrs
- Hemodynamically & clinically stable
- Cultures negative
- ANC 250 - 500 and increasing
- Follow up care planned
- Antibiotics prescribed for appropriate duration.

Consider imaging