

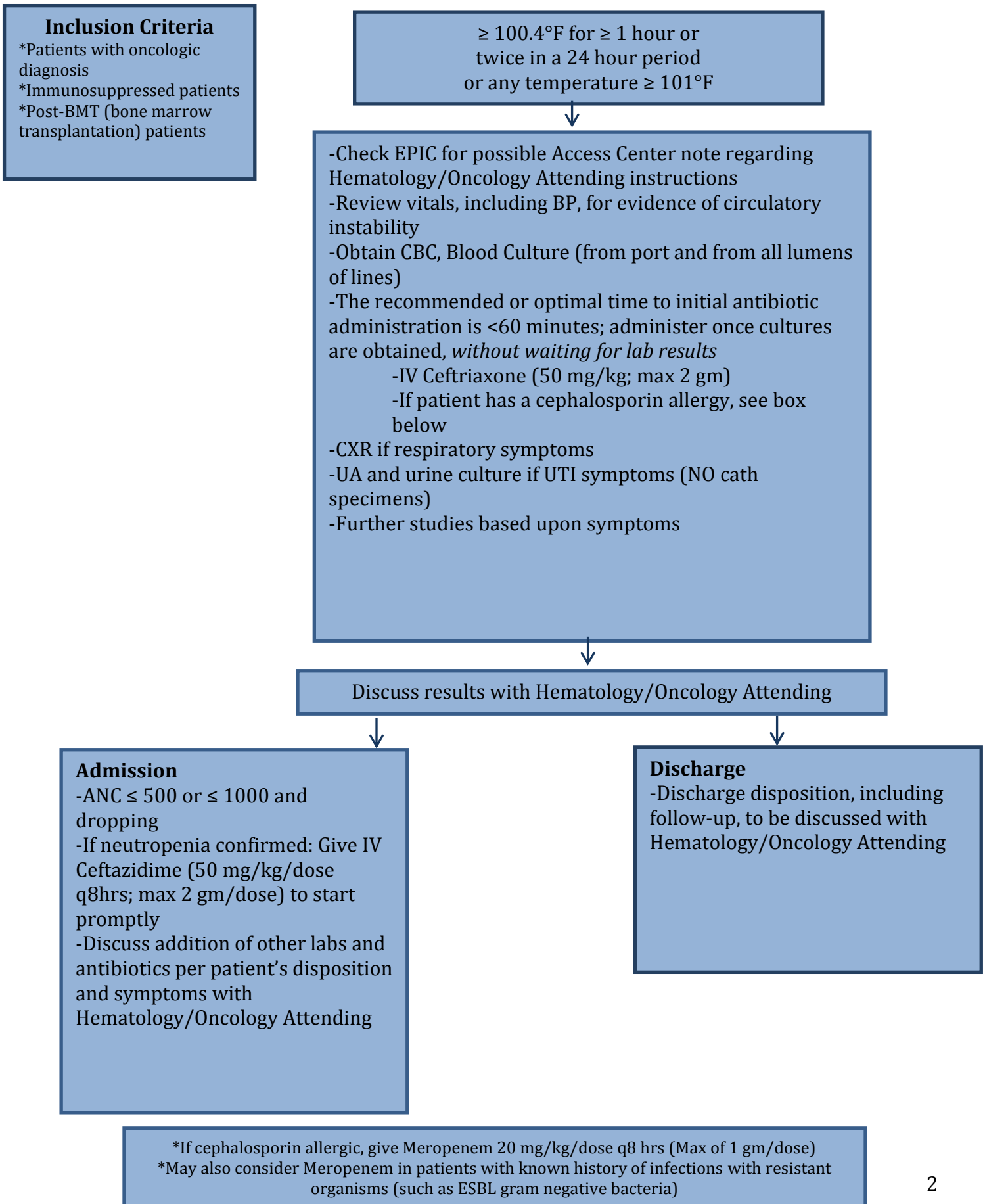
Neutropenic Fever in Hematology/Oncology Patients:

Emergency Department Management
Clinical Practice Guideline (CPG)

Protocol approved by:
Divisions of Pediatric Emergency Medicine
and Hematology/Oncology
Date of approval: 4/14

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Hematology/Oncology Patient with Fever



Objective: The purpose of the Neutropenic Fever Clinical Practice Guideline is to expedite prompt administration of antibiotics to oncology patients who present to the emergency room with fever.

Target Population: Patients with cancer, presenting with fever

Exclusion criteria:

- Children without fever on exam or by history

Inclusion Criteria:

- Children with cancer, oncology patients with immunosuppression, and patients who have had bone marrow transplantation

AND

- Fever greater than or equal to 100.4 °F for greater than or equal to one hour or twice in a 24 hour period

OR

- Any temperature greater than or equal to 101 °F

Target Users: Clinicians at Cardinal Glennon Children’s Medical Center Emergency Department

Introduction:

Neutropenic fever in patients with oncologic disease states can be a potentially serious complication of their treatment. Fever occurs frequently during chemotherapy-induced neutropenia. Fever occurs with neutropenia at least once during chemotherapy rounds in 10-50% of solid tumors and >80% of hematologic malignancies. Clinically documented infections occur in 20-30% of febrile episodes, with the most common sites being intestine, lung, and skin. Bacteremia occurs in 10-25% of patients (Freifeld 2011).

In these immunocompromised patients, timely initiation of intravenous antibiotics to cover for potential bacterial infections is important in reducing morbidity and mortality (Fletcher 2013). Some healthcare settings have identified barriers to prompt antibiotic delivery, including delay in reporting of laboratory results (Burry 2012). A team approach and standardization of the care process has been shown to reduce the time from arrival to antibiotic delivery in the emergency department environment (Volpe 2012).

Assessment and Diagnosis:

1. Assess and review Hematology/Oncology attending instructions from the Access Center note in EPIC
2. Review vitals, including blood pressure for evidence of circulatory instability
3. Obtain CBC, blood culture from port and from all lumens of lines
4. Administer antibiotics once cultures drawn *without waiting for laboratory results*
 - a. Ceftriaxone (50 mg/kg/dose IV; maximum 2 grams) OR

- b. IF Cephalosporin allergy: Meropenem (20 mg/kg/dose IV Q8H; maximum 1 gram/dose)
- c. IF history of resistant infection, including ESBL gram negative organism, may consider meropenem at above dose
- 5. If respiratory symptoms, obtain chest xray
- 6. If UTI symptoms, then obtain urinalysis and culture by clean catch- DO NOT CATH for specimen
- 7. Further studies based upon symptoms
- 8. Discuss results with Hematology/Oncology attending

Management:

Admission Criteria with IV antibiotics

- 1. Admission if ANC is less than 500 or less than 1000 and dropping or expected to drop
- 2. If confirmed neutropenia, recommend initiation of Ceftazidime promptly and schedule dose to start as soon as possible (50 mg/kg/dose IV every 8 hours; maximum 2 gram per dose). Do not wait 12-24 hours after ceftriaxone administered.
- 3. Discuss with Hematology/Oncology attending the addition of other antibiotics per patient's symptoms and disposition
- 4. Obtain additional labs per discussion with Hematology/Oncology attending.

Discharge Criteria:

Discuss with Hematology/Oncology attending discharge disposition including follow-up

References:

Burry E, Punnett A, Mehta A, et al. Identification of Educational and Infrastructural Barriers to Prompt Antibiotic Delivery in Febrile Neutropenia: A Quality Improvement Initiative. *Pediatric Blood Cancer* 2012; 59:431-435.

Fletcher M, Hodgkiss H, Zhang S, et al. Prompt Administration of Antibiotics Is Associated With Improved Outcomes in Febrile Neutropenia in Children With Cancer. *Pediatric Blood Cancer* 2013; 60:1299-1306.

Freifeld AG, Bow EJ, Sepkowitz KA, et al. Clinical Practice Guideline for the Use of Antimicrobial Agent in Neutropenic Patients with Cancer: 2010 Update by the Infectious Diseases Society of America. *Clinical Infectious Diseases* 2011;52(4):e56-e93.

Volpe D, Harrison S, Damian F, et al. Improving Timeliness of Antibiotic Delivery for Patients With Fever and Suspected Neutropenia in a Pediatric Emergency Department. *Pediatrics* 2012; 130; e201-210.