PEDIATRIC BLOOD AND MARROW TRANSPLANT PROGRAM

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Evaluation and Therapy of Neutropenic Fever

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Author: MOORE171	**Owner:** MOORE171
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PBMT-GEN-025
EVALUATION AND THERAPY OF NEUTROPENIC FEVER

1 PURPOSE

1.1 To establish appropriate guidelines for the initial evaluation and treatment of pediatric patients with fever and neutropenia following chemotherapy given in preparation for stem cell mobilization or transplantation.

2 INTRODUCTION

2.1 Patients receiving chemotherapy resulting in neutropenia are at increased risk of developing infectious complications. Bacterial infections are of primary concern; however, fungal infections may arise in patients with prolonged neutropenia.

3 SCOPE AND RESPONSIBILITES

3.1 This procedure applies to all pediatric blood and marrow transplant (PBMT) patients with neutropenic fever.

3.2 Physicians, advancer practice providers, staff nurses, and pharmacists who evaluate and treat patients with neutropenic fever are responsible for adhering to the contents of this procedure.

3.3 All applicable orders by physicians or designees will be entered into the electronic medical record.

4 DEFINITIONS/ACRONYMS

4.1 PBMT - Pediatric Blood and Marrow Transplant

4.2 IV - Intravenous

5 MATERIALS

5.1 NA

6 EQUIPMENT

6.1 NA

7 SAFETY

7.1 NA

8 PROCEDURE

8.1 Definitions:

8.1.1 Neutropenia is defined as a neutrophil count of less than (<) 500/mm^3.

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8.1.2 Fever is defined as a single tympanic temperature of greater than or equal to (≥) 101.3°F (38.5°C) or a tympanic temperature between 100.4 °F (38.0°C) and 101.1 °F (38.4°C) for four (4) consecutive hours.

8.2 Evaluation:

8.2.1 Physical examination will be performed to look for a possible source of fever.

8.2.2 Blood cultures (from all lumens of the patient's central venous catheter(s) will be obtained with initial fever. If the patient has an infusaport, a culture of this device is only necessary if it is the patient's only central access, part of an initial fever and neutropenia workup or if ordered by the patient's provider. Culture of any lesions or diarrheal stool, if present and suspected to be infectious, will be obtained.

8.2.3 Chest radiograph will be obtained if clinically indicated as ordered by the covering MD. Serum chemistries, including electrolytes, creatinine, and liver function tests will be obtained within 24 hours of development of fever.

8.2.4 Additional studies will be obtained as indicated by the patient's clinical situation.

8.2.5 For outpatients, the evaluation and treatment may be initiated in the clinic and subsequently, the patient may be admitted to the hospital for ongoing evaluation and treatment, if appropriate.

8.3 Therapy:

8.3.1 Empirical administration of broad-spectrum antibiotics will begin immediately, but no later than 1 hour following the first fever.

8.3.1.1 For outpatients, the initial regimen will be ceftriaxone IV every day (unless contraindicated).

8.3.1.2 For inpatients, the initial regimen will include cefepime IV every 8 hours (unless contraindicated).

8.3.1.3 If the patient is allergic to cephalosporins, an alternative antibiotic therapy will be ordered.

8.3.1.4 Antibiotic dosing will be adjusted for rental dysfunction and pharmacokinetics if available.

8.3.1.5 Antibiotic approval will be obtained from the Infectious Disease Service if required by Duke Hospital P&T Committee and Antibiotic Subcommittee guidelines.

8.3.1.6 Antibiotic use will be re-evaluated daily based on culture, imaging results and the patient's clinical status.

8.3.2 If the patient remains febrile after 48 hours on broad-spectrum antibiotics:

8.3.2.1 Consider starting vancomycin at a dose appropriate for weight and renal function.

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8.3.2.2 Vancomycin may be added to the initial regimen if patient exhibits obvious signs or symptoms of a line infection or if the patient is septic.

8.3.3 If fever persists 96 hours after broad-spectrum antibiotics are initiated:

8.3.3.1 Consider increasing prophylactic dosing of antifungal azoles to treatment dosing. Approval by the Infectious Disease Service is required for lipid amphotericin products.

8.4 Reportable conditions:

8.4.1 Intolerance or allergy to therapeutic regimen; persistent fever, hypotension, positive cultures, or signs and symptoms of infection

9 RELATED DOCUMENTS/FORMS

9.1 NA

10 REFERENCES

10.1 Hughes WT, Armstrong D, Bodey GP, Bow EJ, Brown AE, et al. 2002 Guidelines for the use of antimicrobial agents in neutropenic patients with cancer. Clin Infect Dis 2002; 34:

10.2 Gilbert C, Meisenberg B, Vredenburgh J, Ross M, Hussein A, et al. Sequential prophylactic oral and empiric once-daily parenteral antibiotics for neutropenia and fever after high-dose chemotherapy and autologous bone marrow support. J Clin Oncol 1994;12: 1005-11.

11 REVISION HISTORY

Revision No.	Author	Description of Change(s)
05	Sally McCollum	-Acronyms defined throughout - Section 8.2.2 updated to read that blood cultures will be obtained "with initial fever". - Removed section regarding "if fever persists 72 hours after broad spectrum antibiotics are initiated". - Section 8.3.2: Removed specifics for vancomycin dosing.

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Author

Name/Signature	Title	Date	Meaning/Reason
Sally McCollum (MOORE171)		26 Feb 2019, 11:10:44 AM	Approved

Medical Director

Name/Signature	Title	Date	Meaning/Reason
Joanne Kurtzberg (KURTZ001)		26 Feb 2019, 06:04:15 PM	Approved

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Name/Signature	Title	Date	Meaning/Reason
Bing Shen (BS76)		27 Feb 2019, 05:01:43 PM	Approved

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Betsy Jordan (BJ42)		28 Feb 2019, 12:11:31 PM	Approved