DukeMedicine
Division of Cellular Therapy

# ADULT AND PEDIATRIC BLOOD AND MARROW TRANSPLANT PROGRAM

**DOCUMENT NUMBER:** APBMT-COMM-017

**DOCUMENT TITLE:**
Pneumocystis Jiroveci Pneumonia (PJP) Prophylaxis

**DOCUMENT NOTES:**

## Document Information

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# APBMT-COMM-017
# PNEUMOCYSTIS JIROVECI PNEUMONIA (PJP) PROPHYLAXIS

## 1 PURPOSE

1.1 To provide a consistent approach to the prevention of pneumocystis jiroveci pneumonia (PJP, formerly PCP; formerly pneumocystis carinii pneumonia) in autologous and allogeneic hematopoietic stem cell transplant recipients.

## 2 INTRODUCTION

2.1 **Level**: Interdependent: Physicians, advanced practice providers, nurses, and pharmacists *(*requires an order from physician or physician designee to be placed in EPIC).*

2.2 **Supportive Data**: Recipients of hematopoietic stem cell transplant (HSCT) recipients are at risk of developing opportunistic infections, including PJP. The risk is dependent on the degree of immunosuppression experienced by the patient both during prior therapy and after transplantation.

## 3 SCOPE AND RESPONSIBILITES

3.1 The Adult and Pediatric Blood and Marrow Transplant (APBMT) medical team will provide medical management of the patient.

3.2 The nursing staff formally trained and experienced in management of patients receiving cellular therapy will provide supportive care and administer any treatment ordered by the medical team.

## 4 DEFINITIONS/ACRONYMS

| | | |
|---|---|---|
| 4.1 | APBMT | Adult and Pediatric Blood and Marrow Transplant |
| 4.2 | GvHD | Graft versus Host Disease |
| 4.3 | HSCT | Hematopoietic Stem Cell Transplant |
| 4.4 | PCP | Pneumocyctisi carnii pneumonia |
| 4.5 | PJP | Pneumocystis jiroveci pneumonia |

## 5 MATERIALS

5.1 N/A

## 6 EQUIPMENT

6.1 N/A

## 7 SAFETY

7.1 N/A

# 8 PROCEDURE

## 8.1 Indications for **Prophylaxis**

8.1.1 All allogeneic patients beginning on Day +30 and continuing until Day +180; continue indefinitely for those receiving ongoing systemic immunosuppression and for those with chronic Graft versus Host Disease (GvHD).

8.1.2 Consider in autologous patients if diagnosed with underlying hematologic malignancy or in those receiving intensive conditioning regimens or with recent exposure to fludarabine, pentostatin, cladribine, or alemtuzumab.

8.1.3 For ABMT, initiate prophylaxis in any HSCT patient receiving equivalent of greater than or equal to (≥) 10 mg/day of prednisone (e.g., patients being treated for pneumonitis).

8.1.4 First-line Therapy:

8.1.4.1 Trimethoprim/sulfamethoxazole is highly preferred due to efficacy in treating PJP and because it has activity against other pathogens to which stem cell transplant recipients are susceptible.

8.1.4.2 Dosing:

8.1.4.2.1 Adult dosing:

- 1 DS tablet po every M-W-F (trimethoprim 160 mg/sulfamethoxazole 800 mg) Alternative schedules include: 1 DS tablet BID on two or three days of each week or 1 DS or 1 SS tablet po daily.

8.1.4.2.2 Pediatric Dosing:

- 75 mg/m2 po twice daily (rounded to the nearest tablet size if able to take tablets.) Alternative dosing schedules may be considered in certain patients/settings.

8.1.5 Alternate Therapy:

8.1.5.1 Dapsone:

8.1.5.1.1 For patients > 12 years of age:

- 100 mg po daily or 100 mg po twice weekly.

8.1.5.1.2 For patients < 12 years of age:

- 2 mg/kg po daily (up to 100 mg) or may be dosed weekly at 4 mg/kg po weekly (up to 100 mg)

8.1.5.2 Pentamidine:

8.1.5.2.1 For patients >5 years of age:

- 300 mg inhaled monthly

8.1.5.2.2 For patients 2-5 years of age:

- 150 mg inhaled monthly

8.1.5.2.3 For patients unable to comply with inhaled therapy choose one of the following:

- Pentamidine:
  - 4 mg/kg/dose IV monthly
- Atovaquone (dosing based on age):
  - 1-3 months of age: 30 mg/kg/day with food (up to 1500 mg)
  - 4-24 months of age: 45 mg/kg/day once daily with food (up to 1500 mg)
  - 24 months to 13 years of age: 30 mg/kg/day once daily with food (up to 1500 mg)
  - ≥13 years of age: 1500 mg po daily with food

8.2 Use before stem cell engraftment (neutrophils and platelets):

8.2.1 Trimethoprim/sulfamethoxazole should be discontinued prior to stem cell infusion and resumed only after stem cell engraftment (Absolute neutrophil count (ANC) greater than or equal to 1000).

8.2.2 Dapsone:

8.2.2.1 Indicated for those allergic or intolerant to trimethoprim/sulfamethoxazole;

8.2.2.2 Caution should be used in sulfonamide-allergic individuals;

8.2.2.3 Rarely causes hemolysis or methemoglobinemia.

8.2.3 Inhaled pentamidine may be used in the time-period after cell infusion while waiting for engraftment.

8.2.3.1 Consider use of albuterol before inhaled pentamidine.

8.3 Reportable Conditions

8.3.1 Intolerance or allergy to prophylactic regimen.

## 9 RELATED DOCUMENTS/FORMS

9.1 N/A

## 10 REFRENCES

10.1 Centers for Disease Control and Prevention. Guidelines for preventing opportunistic infections among hematopoietic stem cell transplant recipients: recommendations of CDC, the Infectious Disease Society of America, and the American Society of Blood and Marrow Transplantation. MMWR 2000; 49(No. RR-10):25-6,106.

## 11 REVISION HISTORY

| Revision No. | Author | Description of Change(s) |
|---|---|---|
| 05 | Sally McCollum | - Acronyms defined throughout<br>- Dosing for Atovaquone in pediatrics updated.<br>- Removed reference to negative pressure room requirements for pediatrics.<br>- Combined second and third line therapies under header of "Alternate Therapy" given any may be chosen based on patient status/clinical preference.<br>- Added pediatric dosing for Bactrim. |

## Signature Manifest

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All dates and times are in Eastern Time.

### APBMT-COMM-017 Pneumocystis Jiroveci Pneumonia (PJP) Prophylaxis

#### Author

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