# Hematologic Malignancies/Stem Cell Transplantation Program
# Clinical Section

**UCLA Health System**
**Los Angeles, CA 90095**

## CS 6.3 DIAGNOSIS AND MANAGEMENT OF FUNGAL DISEASE

*Location: Clinical Section* *Supersedes/Replaces:* B3.421h
*Document drive\path\name* *Effective Date:*

## Purpose and Background

Stem cell transplant patients are at risk for fungal diseases. Because these fungal diseases can sometimes be fatal, it is critical to prevent or treat emperically these complications.

## Objectives

To establish uniform guidelines for prevention, diagnosis, and treatment of fungal diseases.

## Procedure

I. Pre-transplant

A. Prophylaxis:

1. Allogeneic transplant patients will receive prophylactic therapy to prevent fungal disease. Prophylactic posaconazole (400 mg po bid with cola and meals) will be started on day +1 and continued until day 100 after transplant. Patients need to take the posaconazole with cola to increase absorption. Patients with chronic GVHD and those who are on steroids or prolonged immunosuppression should continue on posaconazole after day 100 until immunosuppression is discontinued.
2. Autologous stem cell transplant patients will receive prophylactic nystatin and clotrimazole for antifungal prophylaxis from the time of admission to the time of discharge from the hospital.

B. Persistent fevers on antibiotic therapy:

1. Allogeneic transplant patients:

If a patient on broad-spectrum antibiotics continues to be febrile despite continuation of prophylactic posaconazole and has a suspected fungal infection, switching to empiric intravenous amphotericin or caspofungin may be considered

after fungal cultures of the blood and other suspected sites of infection are performed.

2. Autologous transplant patients:
   If a patient has persistent fever and neutropenia after 4 or more days of therapy with broad spectrum antibiotic therapy, empiric anti-fungal therapy (IV voriconazole, amphotericin, or caspofungin), may be started and continued until the fever and neutropenia have resolved. Use of oral posaconazole for empiric antifungal therapy is unproven.

C. For a patient with suspected fungal pneumonia, bronchoscopy with bronchoalveolar lavage should be considered. An open-lung biopsy may also be done in certain patients. Biopsies and fungal cultures of skin lesions and other suspected sites of fungal infection should also be considered.

D. If patients are enrolled in experimental studies, the study protocol takes precedence over the SOP guidelines.

II. Post transplant prophylaxis:

A. Allogeneic transplant patients who are on steroids or who have active GVHD post transplant will receive prophylactic posaconazole (400 mg po bid with cola and meals) until they are off of immunosuppression. Patients need to take posaconazole with cola to increase absorption. Alternative agents, (voriconazole, caspofungin) can be considered for patients with intolerance to posaconazole.

B. Allogeneic transplant patients who are not on steroids for the control or prevention of GVHD post transplant will receive prophylactic posaconazole for at least 100 days post transplant.

C. Patients with chronic GVHD being treated with prolonged immunosuppression will continue on posaconazole prophylaxis until the immunosuppression is discontinued.

D. Autologous transplant patients will not routinely be placed on fungal prophylaxis post transplant due to their very low risk for serious fungal infections.

**References:**


1) Winston, DJ: Prophylaxis And Treatment Of Infection In The Bone Marrow Transplant Recipient. Current Clinical Topics in Infectious Diseases, Vol. 13 (Remington JS, Swartz MN, eds.). Blackwell Scientific Publications, Inc., Boston 1993. p. 293-321.

2) Winston, DJ: Infections in bone marrow transplant recipients. Principles and Practice of Infectious Disease, Fourth Edition, (Mandell GL, Besett JE, Nolin R, eds). Churchill Livingstone, Inc, New York 1995. p.2717-2722.

3) Walsh TJ, Pappas P, Winston DJ, et al. Voriconazole compared with liposomal amphotericin B for empirical antifungal therapy in patients with neutropenia and persistent fever. N Engl J Med 2002; 345:225-234.

4) Walsh TJ, et al. Caspofungin versus liposoal amphotericin B for empirical antifungal therapy in patients with persistent fever and neutropenia. N Engl J Med 2004; 351:1391-1402.

5) Cornley OA, Maertens J, Winston AJ, et al. Posaconazole compared with standard azole prophylaxis for invasive fungal infections in neutropenic patients receiving chemotherapy for acute myelogenous leukemia or myelodysplastic syndrome. N Engl J Med 2007;356:348-359.

6) Ullmann AJ, Lipton Jh, Vesole DH, et al. Posaconazole or fluconazole for prophylaxis in severe graft-versus-host disease. N Engl J Med 2007; 356:335-347.

**ATTACHMENTS:**

Attachment A: Procedure History
Attachment B: New/Revised Procedure Checklist

**APPROVAL:**

Gary J. Schiller, M.D., F.A.C.P. 8/7/2009
Professor
Director
Hematologic Malignancies/Stem Cell Transplantation Program

Maureen Sedrak, MSHA 8/7/2009
Quality Assurance Manager
Hematologic Malignancies/Stem Cell Transplantation Program

## PROCEDURE HISTORY

| Date | Initials | Page | Item and Summary of Changes |
|---|---|---|---|
| 7/28/09 | | | SOP Title Change |
| 7/28/09 | | | Format Changed |
| 7/28/09 | | | References updated |
| 7/28/09 | | | Revised SOP |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Attachment A**