Management of Candida Infections in Critical Care

AIM: The purpose of this guideline is to provide guidance on the selection of antifungal therapy for suspected or proven candida infections in critical care. It is based upon current published evidence at the time of writing. It is not intended to be a comprehensive clinical pathway or a substitute for consultation with Microbiology

INTRODUCTION

Invasive fungal infections, particularly those caused by Candida species are associated with considerable morbidity and mortality in critical care. Mortality rates are quoted as 40-60%.

Candida infections account for 70-90% of invasive fungal infections. The most common Candida species are albicans, glabrata, tropicalis, parapsilosis and krusei.

Prompt and accurate diagnosis of invasive fungal infections is crucial to guide appropriate therapy. Recent emergence of multi-drug resistant Candida species can complicate the selection of antifungal agent

SCREENING

The following specimens should be sent to the laboratory as soon as possible:

- Peripheral blood cultures
- Sputum or bronchoalveolar lavage
- Catheter stream urine
- Wound or drain fluid
- Oral swab
- Groin swab
- Line tips from intravascular devices

MANAGEMENT

Targeted treatment – proven Candidaemia

The Infectious Diseases Society of America (IDSA) recommends an echinocandin as first-line treatment for Candidaemia. The echinocandin available in South Tees drug formulary is Caspofungin: loading dose 70mg then 50mg daily.

Transition from an echinocandin to fluconazole should be considered within 5-7 days if the patient is clinically stable, isolates are sensitive to fluconazole and repeat blood cultures (taken after initiation of antifungal therapy) are negative.

For infection due to Candida glabrata, transition to higher dose Fluconazole 800mg (12mg/kg) daily or voriconazole 200-300mg (3-4mg/kg) twice daily should be considered amongst those with –azole susceptible isolatesLipid formulation amphotericin B (3-5mg/kg) is a reasonable alternative treatment for Candidaemia if there is intolerance, limited availability or resistance to other antifungal agents.

All patients with Candidaemia should have the following:

- Dilated ophthalmological examination looking for endophthalmitis within the first week of treatment for non-neutropenic patients. For neutropenic patients, ophthalmic examination should be delayed until neutrophil recovery.
- Repeat blood cultures every other day to establish the point at which Candida is cleared.
- Removal of central venous catheters as early as possible in the course of Candidaemia when the source is felt to be the CVC and removal is safe. In neutropenic patients with intravascular devices, other sources of Candidaemia (such as GI tract) predominate.
- Echocardiography to exclude Candida endocarditis
- 2 week duration of therapy after documented clearance of Candida species.
- Longer treatment regimens may be required where there are metastatic complications.

Empirical therapy

Empirical antifungal therapy should be considered where there is evidence of clinical deterioration with non-resolving sepsis despite broad spectrum antibiotic therapy in critically ill patients with high risk conditions:

- Acute necrotising pancreatitis
- Recent gastrointestinal surgery especially GI perforation or anastomotic breakdown
- Diabetes
- Alcohol dependence
- Dialysis
- Immunosuppression
- Long term residence of central venous catheter
- Prolonged ICU stay
- Multiple courses of broad spectrum antibiotics
- Candida isolated from 2 or more sites

Empirical antifungal therapy should be started as soon as possible in patients with high risk conditions. Preferred empirical therapies in non-neutropenic patients are;

- Caspofungin: loading dose 70mg then 50mg daily) **or**
- Fluconazole 800mg (12mg/kg) loading dose then 400mg (6mg/kg) daily if there has been no previous azole exposure and the patient is not colonised with azole resistant pathogens.

Duration of therapy depends on laboratory results and clinical progress. Recommended duration of empirical therapy for suspected invasive candidiasis is 2 weeks.

Prophylactic therapy- this is the administration of antifungal therapy based on primary diagnosis without signs of infection. Administration of prophylactic antifungal in high risk patients should be started after discussing with Microbiology team. Preferred prophylaxis therapy is Fluconazole 800mg (12mg/kg) loading dose then 400mg (6mg/kg) daily. An alternative to this is an echinocandin (Caspofungin: loading dose 70mg then 50mg daily).

Document Details	
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1. Pappas PG, Kauffman CA, Andes Dr et al. Clinical Practice Guideline for the Management of Candidiasis: 2016 Update by the Infectious Diseases Society of America. CID:62

Amendments History		
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