Candida Bloodstream Infection in Left Ventricular Assist Device Recipients

Talha Riaz MD1, Juhsien Nienaber MD2, Larry Baddour MD2, Randall Walker MD2, Soon Park MD3, M. Rizwan Sohail MD2

1 Department of Internal Medicine, Akron General Medical Center, Akron, OH and Northeast Ohio Medical University, Rootstown, OH;
2 Division of Infectious Diseases, Department of Medicine, Mayo Clinic College of Medicine, Rochester, MN;
3 Division of Cardiovascular Surgery, Mayo Clinic College of Medicine, Rochester, MN

INTRODUCTION

Left ventricular assist devices (LVADs) are being increasingly used as bridge-to-transplant and destination therapy for end-stage heart failure that is refractory to medical management. Fungal infections, especially due to Candida species, are uncommon in LVAD recipients but require special consideration in regards to management interventions.

There is limited data on clinical presentation and outcome of infections due to Candida species in LVAD recipients.

METHODS

We retrospectively reviewed hospital records of 247 patients who underwent LVAD implantation at Mayo Clinic campuses in Minnesota, Arizona and Florida, from January 2005 to December 2011. Demographic and clinical data of patients that developed infection due to Candida species were extracted.

RESULTS

Of the 247 patients with LVADs, 7 (2.83%) developed infection with Candida species. The median age of seven patients was 70 years (range, 53-75 years). All patients presented with Candida blood stream infection (BSI).

The causative Candida species included C. albicans (4), C. glabrata (2), and mixed infection with C. albicans and C. dubliniensis (1).

One patient underwent LVAD exchange and two patients underwent heart transplantation. Five of the seven BSI were non-LVAD-related, one was LVAD-related, and one was associated with LVAD pump/cannula infection. Patients received intravenous fluconazole (1), caspofungin (2), amphotericin B, anidulafungin (1) and a combination of caspofungin and fluconazole (2). The average duration of anti-fungal therapy was 4.24 weeks (range, 1wk to 8.5 wks). Two patients received lifelong antifungal suppression with oral fluconazole.

Only two of the patients were alive (both had undergone orthotopic heart transplant). Average survival in this cohort of LVAD recipients with Candida BSI was 6 months (0.3-10.5 months) from the time of candidemia.

CONCLUSION

Despite non-LVAD source of BSI in majority of cases, candidemia in LVAD recipients portends poor long-term survival. Only patients who had undergone heart transplantation survived beyond 6 months.

REFERENCES