عنوان مقاله:

Catheter-related candidemia and identification of causative Candida species in patients with cardiovascular disorder

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خلاصه مقاله:

Background and Purpose: Catheter-related blood circulation infection is the most dangerous and serious side-effects of vascular catheters, which leads to the enhancement of the costs, mortality, and hospital stay duration, especially in the Intensive Care Unit. Regarding this, the aim of the current study was to identify the prevalence of catheter-induced candidemia in the Tehran Heart Center, a heart hospital in Tehran, Iran. Materials and Methods: This study was conducted on patients admitted to Tehran Heart Center for a minimum of ۷ days during ۱۸ months. To detect the fungal elements, blood culture and catheter culture were performed in the patients receiving central or peripheral venous catheter. Then, the polymerase chain reaction (PCR) was applied to determine the possible diagnosis. Results: The investigation of ۲۲۳ samples led to the identification of a total of ۱۵ (۶.۷%) yeast isolates obtained from ۹ (۶۰%), ۴ (۲۶.۶ %), and ۲ (۱۳.۴%) catheter, blood, and skin (of the catheter insertion areas) cultures, respectively. Out of nine Candida isolates obtained from the catheter samples, ۱ (۱۱.۱%), ۱ (۱۱.۱%), ۲ (۲۲.۲%), and ۵ (۵۵.۶%) cases were identified as C. tropicalis, C. membranifaciens, C. glabrata, and C. albicans, respectively, using the internal transcribed spacer region sequencing. Furthermore, the four yeasts isolated from the blood culture included C. tropicalis, C. carpophila, C. membranifaciens, and Cryptococcus albidus. Additionally, one case of C. glabrata and one case of C. albicans were isolated from the skin culture of the catheter insertion areas in patients with positive catheter culture. We reported two cases of catheter-related candidemia caused by C. membranifaciens and C. tropicalis on the basis of the genetic similarity of the species isolated from the blood and catheter. These cases were treated successfully with intravenous fluconazole and catheter removal. Conclusion: There is some evidence indicating the growing prevalence of non-albicans Candida infections. Many risk factors, including prior antibiotic therapy, use of a central venous catheter, surgery, and parenteral nutrition, are considered to be associated with candidemia in hospitalized heart failure patients. The identification of the route of infection in candidemia is difficult. In the current study, the positive blood and catheter cultures for Candida isolates and the similarity of the ITS region of ribosomal DNA sequence of Candida isolated from two patients confirmed the diagnosis of intravenous catheter-related candidemia.

کلمات کلیدی:
Candidiasis, Catheter-related candidemia, Nosocomial infection