CLINICAL INVESTIGATION

Children with candidemia infections

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Editorial

Invasive fungal infections, especially candidemia, are more likely in children who are critically ill or immunocompromised. *Candida albicans* and *Candida parapsilosis* are the two most common causes of candidemia in children. Candidaemia puts children at a higher risk of morbidity and mortality, as well as lengthier hospital stays and higher healthcare costs. Candidaemia risk factors can be used to identify patients who are candidates for empiric therapy. Long-term ICU stays, immunosuppression, prior bacterial infection, and recent surgery are all risk factors, as is the use of a central venous catheter, mechanical ventilation, and/or total parenteral nutrition. According to new guidelines from the Infectious Diseases Society of America, fluconazole or an echinocandin should be considered for empiric therapy in suitable candidates, with an echinocandin being preferred in patients with moderate-to-severe disease, recent azole exposure, or a high risk of *Candida glabrata* or *Candida krusei* infection. Fluconazole or an echinocandin can be used as a first-line treatment for non-neutropenic candidemia, depending on the severity of the infection and other circumstances. The majority of patients with neutropenic candidemia should be treated with an echinocandin or a lipid formulation of *Amphotericin B*, however, fluconazole is advised for those who are not severely unwell and have not recently had an azo infection. Candidaemia risk factors, and thus preventive criteria, in older children, are less well characterized than in infants. To correctly define antifungal prophylaxis criteria for children at high risk of candidemia, more research is needed.

Invasive fungal infections are a leading cause of morbidity, mortality, extended hospital stays, and high healthcare costs in critically ill or immunocompromised children. The majority of invasive fungal infections in children occur in hospitals, and Candida spp. is the most common cause of these infections. Candida spp. was shown to be the most prevalent fungal cause of Bloodstream Infections (BSIs) and the third most common microbiological cause (9.4% of isolates). Bacteria were the most prevalent cause of nosocomial BSI, with coagulase-negative staphylococci (43.3%) and enterococci (43.3%) accounting for the majority of cases (33.3%). Antifungal therapy approaches, such as medication toxicity, pharmacokinetics, and dosing, are influenced by anatomic and physiologic differences between pediatric and adult patients. Furthermore, in children with invasive fungal infections, there is significantly less information accessible to guide decision-making than there is for adults with similar conditions.

In general, the risk factors for fungal infection in kids and teens are similar to those in adults. An increased risk of invasive candidiasis/candidemia in pediatric patients has been linked to a prolonged stay in an ICU, prior bacterial infection, use of a Central Venous Catheter (CVC), and whole parenteral feeding (hyperalimentation). Immunosuppression has also been associated with a rise in invasive candidiasis cases. This could be related to cancer and its treatment, immunosuppressive medicines used during transplantation, or other factors. Invasive candidiasis is linked to mechanical ventilation (endotracheal intubation), dialysis, long-term vancomycin use, and recent surgery. The use of a Central Venous Catheter (CVC), also known as a vascular access device, appears to be a substantial risk factor.