Editorial

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Candidemia in Children

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Invasive fungal infections, particularly candidemia, are more common in seriously unwell or immunocompromised children. The two most common causes of candidemia in children are Candida albicans and Candida parapsilosis. Children with candidemia have a higher risk of morbidity and mortality, longer hospital stays, and higher healthcare expenses. Patients who are candidates for empiric therapy can be identified using candidemia risk factors. Long-term ICU stay, immunosuppression, prior bacterial infection, and recent surgery, as well as the use of a central venous catheter, mechanical ventilation, and/or total parenteral nutrition, are all risk factors. Fluconazole or an echinocandin should be considered for empiric therapy in suitable candidates, according to new guidelines from the Infectious Diseases Society of America, 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. Depending on the severity of the infection and other factors, fluconazole or an echinocandin is also a good first-line treatment for non-neutropenic candidemia. Most patients with neutropenic candidemia should be treated with an echinocandin or a lipid formulation of amphotericin B, however fluconazole is recommended for less critically ill individuals who have not had an azo infection recently. In older children, candidemia risk factors-and thus prophylactic criteria-are less well understood than in newborns. More study is needed to properly define antifungal prophylaxis criteria for children at high risk of candidemia.

In critically ill or immunocompromised children, invasive fungal infections are a significant source of morbidity, mortality, longer hospital stays, and high healthcare expenditures. The majority of invasive fungal infections in children occur in hospitals, and the majority of these infections are caused by Candida spp. Candida spp. were shown to be the third most common microbiological cause of Bloodstream Infections (BSIs) overall (9.4% of isolates) and the most common fungal cause. Bacteria were the most common cause of nosocomial BSI, with coagulase-negative staphylococci (43.3%) and enterococci (33.3%). Anatomic and physiologic differences between paediatric and adult patients influence susceptibility to infection by various Candida species as well as antifungal treatment techniques, including medication toxicity, pharmacokinetics, and dose. In addition, there is far less information available to support decision-making in children with invasive fungal infections than there is for adults with similar diseases.

In general, the risk factors for fungal infection in children and adolescents are comparable to those in adults. Prolonged stay in an ICU, prior bacterial infection, use of a Central Venous Catheter (CVC), and total parenteral feeding (hyperalimentation) that have been linked to an elevated risk of invasive candidiasis/candidemia in paediatric patients. Immunosuppression has also been linked to an increased incidence of invasive candidiasis. This could be due to cancer and its treatment, transplantation immunosuppressive treatments, or other causes. Mechanical ventilation (endotracheal intubation), dialysis, long-term vancomycin usage, and recent surgery are all associated with an increased risk of invasive candidiasis. The use of a vascular access device, also known as a Central Venous Catheter (CVC), appears to be a significant risk factor.

