

# Diagnosis of bacteremia in febrile neutropenic episodes in children with cancer: Microbiologic and molecular approach

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Background: Bacterial isolation using conventional microbiologic techniques rarely surpasses 25% in children with clinical and laboratory findings indicative of an invasive bacterial infection. The aim of this study was to determine the role of real-time polymerase chain reaction (RT-PCR) from whole blood samples compared with automated blood cultures (BC) in detection of relevant microorganisms causing bacteremia in episodes of high-risk febrile neutropenia (HRFN) in children with cancer. Methods: Children presenting with HRFN at 6 hospitals in Santiago, Chile, were invited to participate. Blood samples were obtained at admission for BC, and at admission and 24 hours for RT-PCR targeting DNA of *Escherichia coli*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*

causing bacteremia in children with HRFN. Results: A total of 177 HRFN episodes were evaluated from May 2009 to August 2010, of which 29 (16.3%) had positive BC, 9 (5%) positive for 1 of the 3 selected bacterial species: 5 for