# Diagnosis of paediatric sepsis by automated blood culture system and conventional blood culture

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## Abstract

**Objective:** To evaluate the time required for isolation of aerobic bacterial pathogen from paediatric septicaemia suspects by using BACTEC 9240 blood culture system, and to compare the results with conventional blood culture technique.

**Methods:** This comparative cross-sectional study was conducted at the Jinnah Hospital, Lahore, Pakistan, from July to December 2013, and comprised blood samples of suspected septicaemia children. The blood samples were inoculated into automated BACTEC 9240 Peds Plus/F resin-based media. At the same time, conventional blood culture bottle was also inoculated for comparison. The time of culture positivity and bacterial spectrum isolated from these samples was evaluated. SPSS 20 was used for data analysis.

**Results:** Of the 100 blood culture samples, 36(36%) were true pathogens on BACTEC 9240, while 24(24%) were positive through the conventional method. The mean age of the participants was 0.65±20 days. Staphylococcus aureus was detected in 12(12%) samples by BACTEC 9240 and in 7(7%) cases by conventional system. BACTEC 9240 significantly reduced time of positivity from 48 hours to 21 hours compared to conventional system. The number of samples detected within 36 and 48 hours was 7(19.4%) by BACTEC 9240 and 17(70.8%) by conventional system ($p<0.05$).

**Conclusion:** Diagnosis of paediatric septicaemia through BACTEC 9240 was quicker with high yield and great sensitivity compared to the conventional technique.

**Keywords:** BACTEC 9240, Time to positivity, Septicaemia, Paediatric.