

ABSTRACT

Title

Comparison of conventional blood culture bottle with a commercial blood culture bottle using the manual method.

Introduction

Sepsis is a major cause of morbidity and mortality. Isolation of the causative organism by blood culture directs the clinician to institute specific therapy. Many factors have been evaluated to improve the standards of this test including introduction of Continuous Monitoring Blood Culture Systems (CMBCS).

Introduction of CMBCS is not a reality for most of our institutions including National Institution of Health Sciences (NIHS) in near future due to financial restrictions. Commercial bottles even without the machines are thought to give a better yield and reduce contamination rates

Objective

To compare a conventional blood culture bottle with Brain Heart Infusion used in NIHS with a commercial blood culture bottle with various additives by the manual method.

Method

Comparative descriptive study was carried out from January 2009 to April 2009. Study population consisted of adult and paediatric patients with clinically suspected sepsis admitted to participating institutions during the study period

Clinicians were requested to send a second blood sample in the commercial bottle in addition to the routine sample they send. Bacterial cultures and antibiotic susceptibility tests (ABST) were performed according to laboratory protocol used at NIHS and manufacturer's guidelines for the commercial bottle. Data were analyzed using Epi- 6 software.

Results

182 samples were received in duplicate and two samples were rejected. There were 20 isolates from NIHS bottle and 17 isolates from the commercial bottle within the first 72 hours. Of these only 7 isolates were clinically significant in both bottles (3.87%). Out of these, 13 isolates in the NIHS bottle (7.2%) and 10 isolates in the commercial bottle (5.6%) were contaminants.

After 72 hours, there were 35 contaminants (19.4%) in the NIHS bottle and 2 (1%) in the commercial bottle.

Proportion of blood culture bottles that yielded significant isolates in patients treated with antibiotics prior to cultures were same in both bottles. (3.8 %)

Conclusion

There was no difference in the isolation rates of two types of bottles. But there is a significant difference in contamination rates in two bottles after 72 hours. (p- <0.001) The effectiveness of use of antibiotic neutralizing resins in increasing yield was not noted.