



The aim of the study was to evaluate the accuracy of cultures obtained through indwelling arterial catheters for the diagnosis of bloodstream infections in critically ill pediatric patients” Berger et al (2018).

Abstract:

OBJECTIVES: Arterial catheters may serve as an additional source for blood cultures in children when peripheral venipuncture is challenging. The aim of the study was to evaluate the accuracy of cultures obtained through indwelling arterial catheters for the diagnosis of bloodstream infections in critically ill pediatric patients.

ReTweet if useful... Accuracy of blood cultures drawn from arterial catheters for BSI detection
<https://ctt.ec/5ip4u+> @ivteam #ivteam

Click To Tweet

DESIGN: Observational and comparative.

SETTING: General and cardiac ICUs of a tertiary, university-affiliated pediatric medical center.

PATIENTS: The study group consisted of 138 patients admitted to the general or cardiac PICU in 2014-2015 who met the following criteria: presence of an indwelling arterial catheter and indication for blood culture.

INTERVENTIONS: Blood was drawn by peripheral venipuncture and through the arterial catheter for each patient and sent for culture (total 276 culture pairs).

MEASUREMENTS AND MAIN RESULTS: Two specialists blinded to the blood source evaluated each positive culture to determine if the result represented true bloodstream infection or contamination. The sensitivity, specificity, and positive and negative predictive values of the arterial catheter and peripheral cultures for the diagnosis of bloodstream infection were calculated. Of the 56 positive cultures, 41 (15% of total samples) were considered diagnostic of true bloodstream infection. In the other 15 (5%), the results were attributed to contamination. The rate of false-positive results was higher for arterial catheter than for peripheral venipuncture cultures (4% vs 1.5%) but did not lead to prolonged unnecessary antibiotic treatment. On statistical analysis, arterial catheter blood cultures had high sensitivity (85%) and specificity (95%) for the diagnosis of true bloodstream infection, with comparable performance to peripheral blood cultures.

CONCLUSION: Cultures of arterial catheter-drawn blood are reliable for the detection of bloodstream infection in PICUs.

Reference:

Berger, I., Gil Margolis, M., Nahum, E., Dagan, O., Levy, I., Kaplan, E., Shostak, E., Shmuelov, E., Schiller, O. and Kadmon, G. (2018) Blood Cultures Drawn From Arterial Catheters Are Reliable for the Detection of Bloodstream Infection in Critically Ill Children. *Pediatric Critical Care Medicine*. February 5th. .

doi: 10.1097/PCC.0000000000001462.

Thank you to our partners for supporting IVTEAM

