Abstract:

BACKGROUND: To prevent contamination when taking blood culture, there are various effective interventions. Whether there is greater efficacy by using a combination of these interventions has not been widely evaluated.

METHODS: Our six-element intervention bundle aimed to prevent contamination of blood culture in our emergency department (ED). Elements were: use of 1% chlorhexidine alcohol, alcohol wiping, hand hygiene, using sterile gloves, using holed sterile cover, and selection of upper extremities as the site of venipuncture. We compared the contamination rate of blood culture between the pre- and the post-intervention periods among all cases with two or more blood cultures taken in our ED. We also evaluated the rate of patients receiving vancomycin among all those transferred to the hospital from the ED.

RESULTS: During the pre- and post-intervention periods, 460 and 450 cases were included in analysis, respectively. Contamination of blood culture occurred in 29 pre-intervention cases (6.3%) and five post-interventional cases (1.1%) (relative risk 0.18, 95% confidence interval 0.07 to 0.45; \( P < 0.001 \)). After bundle implementation, there was significant increase in adherence to using 1% chlorhexidine alcohol, alcohol wiping, hand hygiene, and using holed sterile covers. Among patients admitted to hospital, fewer patients received vancomycin during the post-intervention period than in the pre-intervention period (5.4% vs. 3.2%, \( P = 0.03 \)).

CONCLUSIONS: Our intervention bundle dramatically reduced the contamination rate when drawing blood culture in our ED.

Reference: