Testing discard guidelines when collecting blood for cultures from central venous catheters (CVCs)

Abstract:

INTRODUCTION: Lack of specific guidelines regarding collection of blood for culture from central venous catheters (CVCs) has led to inconsistencies in policies among hospitals. Currently, no specific professional or regulatory recommendations exist in relation to using, reinfusing, or discarding blood drawn from CVCs before drawing blood for a culture. Repeated wasting of blood may harm immunocompromised pediatric oncology patients. The purpose of this comparative study was to determine whether differences exist between blood cultures obtained from the first 5 mL of blood drawn from a CVC line when compared with the second 5 mL drawn.

METHODS: During 2009-2011, 62 pediatric oncology patients with CVCs and orders for blood cultures to determine potential sepsis were enrolled during ED visits. Trained study nurses aseptically drew blood and injected the normally discarded first 5 mL and the second specimen (usual care) into separate culture bottles. Specimens were processed in the microbiology laboratory per hospital policy.

RESULTS: Positive cultures were evaluated to assess agreement between specimen results.
and to determine that the identified pathogen was not a contaminant. Out of 186 blood culture pairs, 4.8% demonstrated positive results. In all positive-positive matches, the normal discard specimen contained the same organism as the usual care specimen. In 4 matches, the normally discarded specimen demonstrated notably earlier time to positivity (4 to 31 hours) compared with the usual care specimen, which resulted in earlier initiation of definitive antibiotics.

DISCUSSION: These findings support the accuracy of the specimen that is normally discarded and suggest the need to reconsider its use for blood culture testing.