The aim of our study was to determine the proportion of BSIs that would be missed without the third BCS in a hospital where obtaining 3 BCSs is the standard of care" Blanco et al (2018).

Abstract:

OBJECTIVES: The question of whether to obtain 2 or 3 sets of blood cultures to assess the etiology of bloodstream infections (BSIs) remains open to debate. Few studies have assessed the proportion of BSIs missed without the third blood culture set (BCS). The aim of our study was to determine the proportion of BSIs that would be missed without the third BCS in a hospital where obtaining 3 BCSs is the standard of care.

METHODS: We performed a descriptive retrospective study in Hospital Gregorio Marañón (Madrid) from 2010 to 2013. We included all episodes of BSI in which 3 BCSs were systematically obtained.

RESULTS: We included 4,000 episodes of BSI between 2010 and 2013. Without the third BCS, we would have missed 298 (7.5%) episodes of BSI: 141 (47.3%) by gram-positive microorganisms, 147 (49.3%) by gram-negative microorganisms, and 10 (3.4%) by yeasts. In 132/298 (44.3%) of the episodes another clinical sample have been obtained within a week of the BCS extraction; in 101/298 (33.9%), the same microorganism was present in a significant clinical sample other than blood.

CONCLUSIONS: Our data suggest that performing a third BCS is useful, as elimination of this sample could lead an unacceptable number of BSIs to go undetected.

Reference:

Blanco, A.C., Pérez-García, F., Sánchez-Carrillo, C., de Egea, V., Muñoz, P. and Bouza, E. (2018) Estimation of missed bloodstream infections without the third blood culture set: a retrospective observational single-center study. Clinical Microbiology and Infection. June 28th. .

doi: 10.1016/j.cmi.2018.06.024.