

Time to positivity (TTP) and differential time to positivity (DTTP) between central and peripheral blood cultures are commonly used for bacteraemia to evaluate the likelihood of central venous catheter (CVC) related bloodstream infection. Few studies have addressed these approaches to yeast fungaemia” Gits-Muselli et al (2019).

Abstract:

BACKGROUND: Time to positivity (TTP) and differential time to positivity (DTTP) between central and peripheral blood cultures are commonly used for bacteraemia to evaluate the likelihood of central venous catheter (CVC) related bloodstream infection. Few studies have addressed these approaches to yeast fungaemia.

OBJECTIVES: This study aimed to evaluate TTP and DTTP to assess CVC-related yeast fungaemia (CVC-RYF).

PATIENTS/METHODS: We retrospectively analysed the results from 105 adult patients with incident fungaemia, with CVC removed and cultured, collected from 2010 to 2017. The bottles were incubated in a BioMérieux BacT/ALERT 3D and kept for at least 5 days.

RESULTS: Of the 105 patients included, most were oncology patients (85.7%) and had of long-term CVC (79.6%); 32 (30.5%) had a culture positive CVC (defined as CVC-RYF) with the same species as in blood culture and 69.5% had culture negative CVC (defined as non-CVC-RYF, NCVC-RYF). *Candida albicans* represented 46% of the episodes. The median TTP was statistically different between CVC-RYF or NCVC-RYF [16.8h interquartile range (IQR) [9.7-28.6] vs. 29.4h ; $p = 0.001$]. A TTP <10h had the best positive likelihood ratio (21.5) for CVC-RYF, although the sensitivity was only 28%. DTTP was available for 52 patients. A DTTP >5h had a sensitivity of 100% and a specificity of 71% for CVC-RYF.

CONCLUSIONS: Since the median TTP was 17h and the most performing DTTP >5h, these delays are too long to take a decision in the same operational day. More rapid methods for detecting infected catheters should be tested to avoid unnecessary CVC withdrawal.

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Reference:

Gits-Muselli, M., Villiers, S., Hamane, S., Bercot, B., Donay, J.L., Denis, B., Guigue, N., Alanio, A. and Bretagne, S. (2019) Time to and differential time to blood culture positivity for assessing catheter-related yeast fungaemia: A longitudinal, 7-year study in a single university hospital. *Mycoses*. October 19th. doi: 10.1111/myc.13024. .