

118. Factors Associated with Positive Follow-up Blood Cultures in Gram-Negative Septicemia

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Session: 37. Bacteremia, CLABSI, and Endovascular Infections
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Background. Bloodstream infections remain a significant cause of morbidity and mortality. No guidelines for the management of noncatheter-associated Gram-negative septicemia exist. There is considerable debate regarding the role of follow-up blood cultures. Studies have shown inadequate antibiotic therapy increases mortality in Gram-negative sepsis. We evaluated factors associated with a higher likelihood of positive follow-up blood cultures (FUBC).

Methods. A retrospective cohort study was conducted to look at factors associated with an increased likelihood of positive FUBC. Data were obtained via Epic chart review. Empiric antimicrobial regimens were reviewed in all patients with MDRO infections.

Results. We identified 1,527 patients ≥ 18 years admitted with gram-negative septicemia from January 1, 2013 through January 1, 2018. A total of 8.4% had positive FUBC. Patients with positive FUBC had a younger median age than the no-growth group (64.7 vs. 69.4, $P < 0.001$). Admission systolic blood pressure was lower in the group with positive FUBC than the no-growth group (107 vs. 116, $P = 0.008$). The odds ratio for positive FUBC for cardiac device was 2.08 (95% CI = [0.97, 4.35], $P = 0.061$); central line infection (vs. urinary tract infection) adjusted odds ratio was 2.08 (95% CI = [1.10, 3.95], $P = 0.025$). The positive FUBC group had a larger proportion of multidrug-resistant organisms (MDRO) (21.9% vs. 10.4%, $P < 0.001$) with an odds ratio of 2.40 (95% CI = [1.53, 3.78]). In this group, those who received inadequate empiric antibiotics had a significantly higher percentage of repeat positive results (78.6% vs. 57.1%, $P = 0.033$). In summary, patients with either an MDRO, a central line infection (vs. urinary tract infection), or the presence of a cardiac device (vs. no cardiac device present) had over twice the odds of positive FUBC than those without.

Conclusion. Though the role of FUBC for Gram-negative septicemia has been brought into question, our results show that the presence of central lines, cardiac devices, infections with MDRO organisms, or inadequate empiric antibiotics on admission were factors strongly correlated with subsequent positive FUBC. Therefore, we believe that repeating blood cultures in this subset of patients require further study and consideration.

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119. Nocardia Bacteremia Is Almost Always Associated with Immune Compromise or an Intravascular Device: Single-Center Case Series and Systematic Review of the Literature

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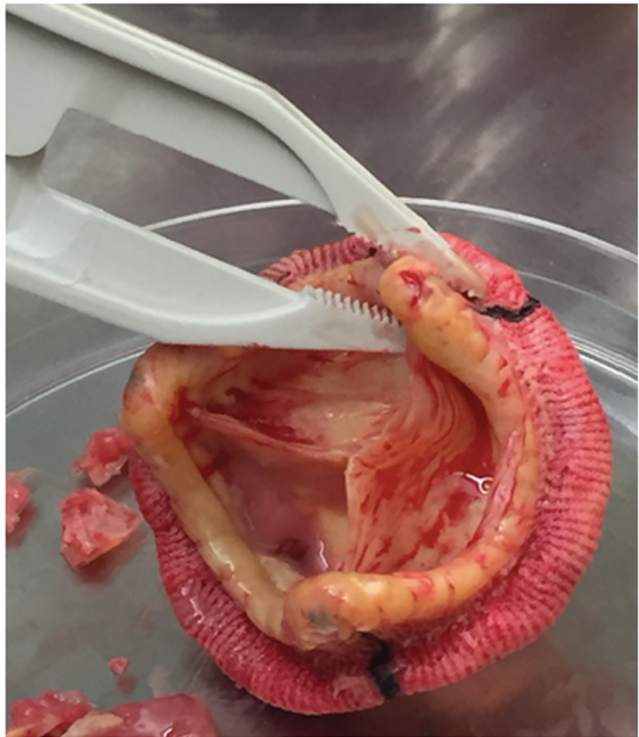
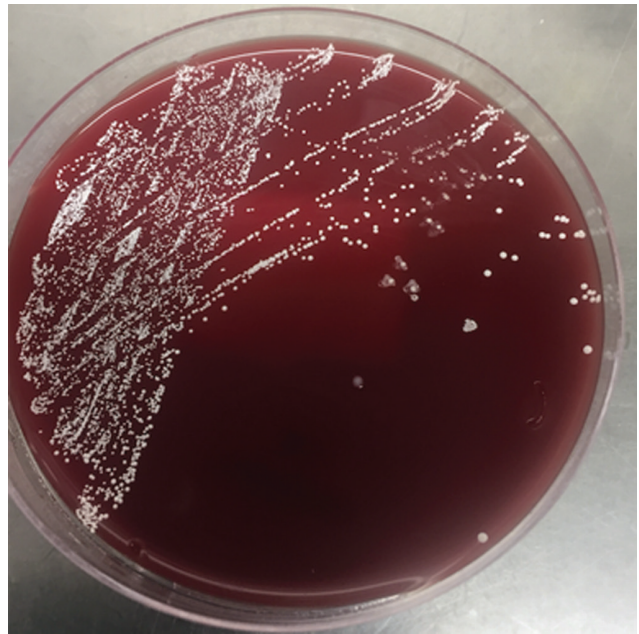
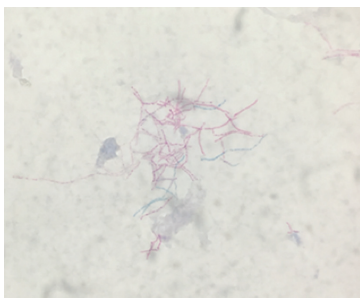
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Background. Nocardia bacteremia is a rare but important phenomenon, with previous studies describing a 50% mortality rate. We undertake a single-center review and the largest systematic review of Nocardia bacteremia performed over the past 20 years.

Methods. A single-center review of cases of Nocardia bacteremia was performed using hospital microbiology records from January 1, 2010 to December 31, 2017. A systematic literature review was also performed to identify cases of Nocardia bacteremia described in the English language literature between January 1, 1999 and December 31, 2018 using the NCBI PubMed database and snowballing from citations of relevant publications.

Results. Single-center case series: Four cases of Nocardia bacteremia are described. Three patients had an intravascular device in situ prior to the onset of Nocardia bacteremia and three patients were immunocompromised; one patient had both risk factors. Systematic literature review: A systematic review identified 50 publications that described 85 cases with sufficient patient data to be reviewed in detail. Including the 4 cases described in our institution, 89 cases of Nocardia bacteremia were included in the analysis. The median age was 57 years [interquartile range (IQR) 42–68] and 69% were male. Eighty-two percent of cases were immunocompromised and 38% had endovascular devices. Pulmonary infection was the most common concurrent site of clinical disease (66%), followed by central nervous system (25%), pleural (17%) disease, and endocarditis (11%). Blood cultures were the only positive microbiological specimen that isolated Nocardia in 45% of cases. Median incubation time to blood culture positivity was 4 days [IQR 3–6]. Thirty-day all-cause mortality was 24% and overall all-cause mortality was 42%.

Conclusion. Four new cases of Nocardia bacteremia are described. Isolation of Nocardia from blood cultures is rare but represents serious infection with high associated overall mortality. Nocardia bacteremia is most frequently identified in immunocompromised patients and those with intravascular devices.



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120. The Impact of Early Central Venous Catheter Removal in the Management of Enterococcus Central Line-Associated Bloodstream Infections

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Background. There has been a rise in Enterococcus species Central Line-Associated Bloodstream Infections (CLABSI) ranking as the third overall causative organism according to the Center for Disease Control and Prevention (CDC) report issued in 2014. Central Venous Catheter (CVC) management including the need and timing of CVC removal is not well defined for enterococcus bacteremia (EB) in the