290. Impact of follow up blood cultures on outcomes of patients with gram-negative bloodstream infections

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Session: P-9. Bacteremia

Background: Importance of follow up blood cultures (FUBC) for Staphylococcus aureus bloodstream infections (BSI) is well known, but the role of FUBC in gram-negative BSI remains controversial. This retrospective cohort study examined the association between obtaining FUBC and mortality in patients with gram-negative BSI.

Methods: Adults with first episodes of community-onset monomicrobial BSI due to gram-negative bacilli hospitalized at Prisma Health-Midlands hospitals in Columbia, South Carolina, USA from January 1, 2010 to June 30, 2015 were included. Patients who died or were discharged from hospital within 72 hours of collection of index blood culture were excluded to minimize impact of survival and selection biases on results, respectively. FUBC were defined as repeat blood cultures obtained between 24 and 96 hours from initial positive blood culture. Cox proportional hazards regression model was used to examine association between obtaining FUBC and 28-day all-cause mortality.

Results: Among 766 patients with gram-negative BSI, 219 (28.6%) had FUBC obtained and 15 of 219 (6.8%) FUBC were persistently positive. Overall, median age was 67 years, 438 (57%) were women, 457 (60%) had urinary source of infection, and 426 (56%) had BSI due to Escherichia coli. Mortality was significantly lower in patients who had FUBC obtained than in those who did not have FUBC (6.3% vs. 11.7%, log-rank p=0.03). Obtaining FUBC was independently associated with reduced mortality (hazards ratio [HR] 0.49, 95% CI: 0.25–0.90) after adjustments for age (HR 1.35 per point, 95% CI: 1.26–1.50), and inappropriate empirical antimicrobial therapy (HR 2.37, 95% CI: 1.17–4.39).

Conclusion: Obtaining FUBC was associated with improved survival in hospitalized patients with gram-negative BSI. These observations are consistent with the results of recent publications from Italy and North Carolina supporting utilization of FUBC in the management of gram-negative BSI.

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Conclusion: Considerable variation in comfort using OAT for uBSIs among IDC vs NIDC exists, highlighting opportunities for IDC to continue to demonstrate their value in clinical practice. Understanding the reasons for variability may be helpful in creating best practice guidelines to standardize decision making.

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291. Impact of Surveillance and Offered Infectious Diseases Consults for Staphylococcus aureus Bacteremia on Quality of Care Indicators

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Session: P-9. Bacteremia

Background: Staphylococcus aureus bacteremia (SAB) remains the leading cause of bloodstream infections and is associated with 20–40% mortality. Past studies demonstrated that Infectious Diseases (ID) consultation is associated with better adherence to quality of care indicators (QCIs), including follow-up blood cultures, echocardiography, early source control, and appropriate choice and duration of antibiotics. A 2014 quality improvement project at Medstar Washington Hospital Center (MWHC) by Narsana et al. showed significantly better adherence to SAB QCIs among patients with ID consults and a non-significant trend towards lower mortality. In 2015, MWHC instituted a policy advocating ID consultation for all SAB patients, and active surveillance was performed by the ID Section to offer prompt consults prospectively. Our study aimed to assess the impact of this policy and the proactively offered ID consults on adherence to SAB QCIs and mortality rates amongst patients with SAB with and without ID consults.

Methods: We retrospectively reviewed 557 patients diagnosed with SAB between July 1st, 2015 - June 30th, 2018. Data included follow-up blood cultures, echocardiography, presence of a focal source of infection, use of appropriate antibiotics, measurement of vancomycin levels, duration of therapy, death during hospitalization, and presence of an ID consultation. Chi-Square and Fisher exact tests, and t-test and Wilcoxon rank sum test were used to analyze categorical and continuous variables, respectively.

Results: A total of 513 patients were included in the analysis, 88% (n=453) of whom had ID consultations. Patients with ID consultations were more likely to have a focal source of infection (84% vs. 50%, p < 0.0001), echocardiography (97% vs. 56%, p < 0.0001), use of a beta-lactam antibiotic for methicillin-susceptible S. aureus (90% vs 65%, p < 0.0001), and a longer duration of therapy (33 vs 9 days, p < 0.0001). Mortality was lower among patients with ID consults (16% vs. 23%, p=0.1495), but the difference was not statistically significant.

Conclusion: Our study demonstrates that ID consultation is associated with better adherence to SAB QCIs, with a trend towards lower mortality: Hospital systems should support mandatory ID consultation for patients with Staphylococcus aureus bacteremia.

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292. Impact of the BACT/ALERT VIRTUO blood culture system in the management of Staphylococcus aureus bacteremia

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Session: P-9. Bacteremia

Background: Staphylococcus aureus bacteremia (SAB) is a major cause of mortality. Recovery of SA may be enhanced with new blood culture systems resulting in a longer observed duration of bacteremia.

Methods: We performed a 24-month retrospective study of adults hospitalized with SAB at a 1250-bed academic hospital. Between 1/2018-12/2018 the VersaTREK system was used and 1/2019-12/2019 the BACT/ALERT VIRTUO (VIRTUO) system was used. We excluded patients without an Infectious Diseases (ID) consult. We defined