Abstract:

Background: While the majority of healthcare in the US is provided in community hospitals, the epidemiology and treatment of bloodstream infections in this setting is unknown.

Methods and Findings: We undertook this multicenter, retrospective cohort study to 1) describe the epidemiology of bloodstream infections (BSI) in a network of community hospitals and 2) determine risk factors for inappropriate therapy for bloodstream infections in community hospitals. 1,470 patients were identified as having a BSI in 9 community hospitals in the southeastern US from 2003 through 2006. The majority of BSIs were community-onset, healthcare associated (n = 823, 56%); 432 (29%) patients had community-acquired BSI, and
215 (15%) had hospital-onset, healthcare-associated BSI. BSIs due to multidrug-resistant pathogens occurred in 340 patients (23%). Overall, the three most common pathogens were S. aureus (n = 428, 28%), E. coli (n = 359, 24%), coagulase-negative Staphylococci (n = 148, 10%), though type of infecting organism varied by location of acquisition (e.g., community-acquired). Inappropriate empiric antimicrobial therapy was given to 542 (38%) patients. Proportions of inappropriate therapy varied by hospital (median = 33%, range 21–71%). Multivariate logistic regression identified the following factors independently associated with failure to receive appropriate empiric antimicrobial therapy: hospital where the patient received care (p<0.001), assistance with ≥3 ADLs (p = 0.005), Charlson score (p = 0.05), community-onset, healthcare-associated infection (p = 0.01), and hospital-onset, healthcare-associated infection (p = 0.02). Important interaction was observed between Charlson score and location of acquisition.

Conclusions: Our large, multicenter study provides the most complete picture of BSIs in community hospitals in the US to date. The epidemiology of BSIs in community hospitals has changed: community-onset, healthcare-associated BSI is most common, S. aureus is the most common cause, and 1 of 3 patients with a BSI receives inappropriate empiric antimicrobial therapy. Our data suggest that appropriateness of empiric antimicrobial therapy is an important and needed performance metric for physicians and hospital stewardship programs in community hospitals.

Other intravenous and vascular access resources that may be of interest (External links – IVTEAM has no responsibility for content).