

Start Smart With Antimicrobial Stewardship

To the Editor—Bai et al reported a lower in-hospital mortality in 847 patients with *Staphylococcus aureus* bloodstream infections (SA-BSI) who received an infectious diseases (ID) consultation within 7 days of blood culture collection compared to the other patients without ID consultation (21% vs 29%; $P = .0451$; odds ratio [OR], 0.72; 95% confidence interval [CI], 0.52–0.99) [1].

In a similar time frame (2005–2007) we retrospectively reviewed 289 patients with SA-BSI in a 1200-bed hospital in Turin and studied the risk factors for mortality at 21 days after diagnosis. In our study, ID consultation was defined if written in the medical records at any time during admission, in patients with SA-BSI.

The WalkAway system (Siemens, Sacramento, California) was used for isolates identification and antimicrobial susceptibility testing. Continuous variables were compared with Student t test or the Mann–Whitney U test (for non-normally distributed variables). Categorical variables were evaluated with the χ^2 or 2-tailed Fisher exact test. ORs and 95% CIs were calculated for all associations that emerged. Two-tailed tests were used to determine statistical significance; a P value of $<.05$ was considered significant. Multivariate analysis was used to identify independent risk factors for mortality. A logistic regression was used and only significant variables at univariate analysis were incorporated with a stepwise approach. Ethical committee approval was waived due to the retrospective nature of the study, which was approved by the Medical Direction of the Hospital.

Table 1. Risk Factors Significantly Associated With 21-day Mortality at Univariate and Multivariate Analysis

Variable n (%)	Non Survivors (n = 56)	Survivors (n = 233)	P Value	OR (95% CI)
Age >60 yr old	47 (83.9)	143 (61.4)	.002	NS
CVC removal	7 (12.5)	75 (32.2)	.0001	NS
HCA infection	24 (42.9)	57 (24.5)	.0075	NS
Charlson index Score (\pm SD)	4.50 (\pm 2.13)	3.31 (\pm 2.15)	.0003	NS
ID consult	3 (5.4)	44 (18.9)	.012	0.172 (0.031–0.951)
Severe sepsis	44 (78.6)	36 (15.5)	.0001	3.55 (1.176–10.796)
Septic shock	38 (67.9)	6 (2.6)	.0001	46.536 (9.549–226.78)
Admission <6 mo before BSI	37 (66.1)	119 (51.1)	.003	3.370 (1.052–10.796)

Abbreviations: BSI, bloodstream infection; CI, confidence interval; CVC, central venous catheter; HCA, healthcare-associated; ID, infectious diseases; NS, not significant; OR, odds ratio; SD, standard deviation.

In our study, 62% of patients were male (n = 180), with a median age of 67 years old, a median Charlson index of 3.5; 54% of patients were admitted within the preceding 6 months; 150 (51.9%) had a methicillin-resistant *Staphylococcus aureus* (MRSA) BSI and 69% were represented by nosocomial infections. The median length of stay was 39 days; 53% of patients had a central venous catheter (CVC) at diagnosis, which was removed in 54% of cases. The 21-day mortality was 19.4% (56), and the risk factors for mortality are reported in Table 1.

Beside ID consultation was performed in 47 patients (16.3%), and the ID consult was significantly associated with survival (5.4% vs 18.9%; $P = .012$), a finding confirmed by multivariate analysis (OR, 0.72; 95% CI, .031–.951), together with severe sepsis or septic shock and previous hospitalization [3.55 (1.176–10.796); OR 46.536 (9.549–226.78) and 3.370 (1.052–10.796), respectively] (Table 1).

These data strengthen the findings by Bai et al and illustrates the value of ID consultation as studied before the publication of official Infectious Diseases Society of America guidelines for management of SA-BSI and management of infections

associated to CVCs [2,3]. These data confirm the great value of a bedside ID consultation in SA-BSI to optimize drug choice, dosage, and duration of treatment in patients with MRSA as well as methicillin-sensitive *Staphylococcus aureus* infections but also for the correct management of CVCs and to exclude metastatic complications with appropriate imaging studies. Treatment of SA-BSI is a significant part of any antimicrobial stewardship programs, which should be implemented in any hospital. In the antimicrobial stewardship era, start smart with SA-BSI [4]! There are multiple opportunities to optimize treatment and outcome, focusing on diagnosis.

Note

Potential conflicts of interest. All authors: No reported conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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