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The impact of infectious disease consultation and intervention on patients with staphylococcus aureus bloodstream infection

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Introduction

Staphylococcus aureus is one of the major causes of bloodstream infection. Infectious disease consultation (IDC) and intervention measures may improve the outcome and management in patients with bloodstream infection.

Objective

The aim of this study was to assess the effect of IDC on management and outcome of S. aureus bloodstream infection.

Methods

A retrospective study of patients with SAB was conducted at a tertiary teaching hospital from January 2017 to June 2019. ID consultation was tracted from hospitalization system database. The association of ID consuation and mortality and compliance with quality control measures were determined.

Results

A total of 139 patients were studied and IDC covered 28.8% of these patients. Significantly more patients in the IDC group had transesophageal echocardiogram (P=0.024), repeated blood culture (P=0.031), appropriate antibiotic therapy (P=0.023) and a longer duration of appropriate antibiotic therapy (P=0.043). Mortality rate was lower in the IDC group compared with NIDC group (P=0.049). The differences of length of hospital stay, time to blood culture clearance and hospitalization expenses between the two groups were not statistically significant. After multivariate logistic regression analysis, IDC was associated with lower mortality (OR=0.4, P<0.05).

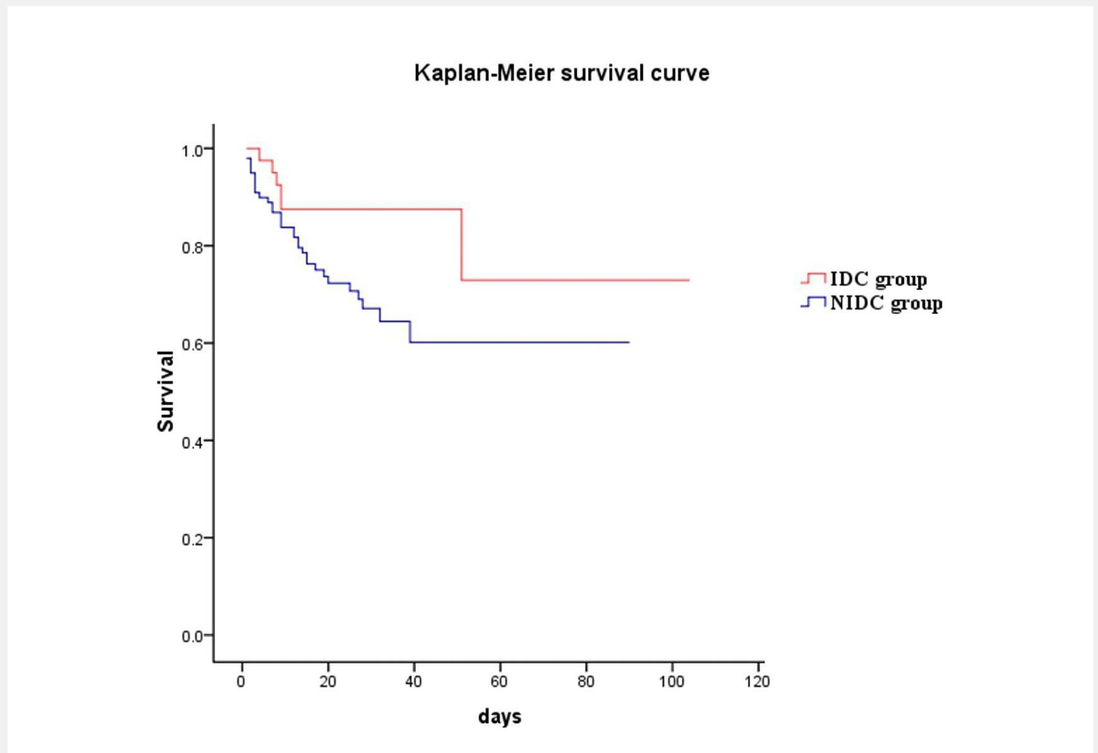

Figure 1. The Kaplan-Meier survival curve of mortality for patients in infectious disease consultation (IDC) and non- infectious disease consultation (NIDC) groups. The survival estimates between two groups was statistically significant by the log-rank test (P < 0.05).

Conclusion

Infectious disease consultation in staphylococcus aureus bloodstream infection was associated with a better adherence to management and lower mortality. Routine IDC should be considered for patients with S. aureus bloodstream infection.

Table: Multivariate logistic regression analysis of factors associated with mortality

Variables	Odds ratio	95% confidence interval	P value
Renal failure	3.2	0.3 - 9.6	0.309
Hypoproteinemia	1.5	0.2 - 1.7	0.271
ICU stay	4.8	3.9 - 8.1	<0.01
Mechanical ventilation	1.8	1.2 - 2.5	<0.01
therapeutic time of antibiotic use	1.1	1.0 - 1.2	<0.01
ID consultation	0.4	0.2 - 1.0	0.049

Abbreviations: ICU, intensive care unit; ID, infectious disease.