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ePoster Viewing
Sepsis, bloodstream and graft infections: Staphylococcus aureus and others

CLINICAL ANALYSIS OF PROGNOSTIC FACTORS IN METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS BLOODSTREAM INFECTION: ASSOCIATION WITH 30-DAY MORTALITY

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Table 1. Multivariate analysis of the factors associated with 30-day mortality in MRSA bloodstream infection

Risk factors	Partial Regression Coefficient	Odds Ratio	95% Confidence Interval	p-value
VCM MIC >= 1.5 (mcg/mL)	1.348	3.849	1.285-11.527	0.016
Dosing period of 1st anti-MRSA agent	-0.118	0.889	0.818-0.966	0.005

OBJECTIVES

Methicillin-resistant *Staphylococcus aureus* (MRSA) is one of the major pathogens that causes hospital and community-acquired infections. MRSA bloodstream infection (BSI) has a serious clinical course with high mortality. The aim of this study was to establish the prognostic factors of MRSA BSI in Showa University Hospital in Japan.

METHODS

Showa University Hospital is a 1000-bed teaching institution in Tokyo, Japan. A total of 134 cases with MRSA BSI were included between January 2009 and December 2012. Susceptibility of all MRSA strains to vancomycin (VCM) was measured by microdilution susceptibility testing [minimum inhibitory concentration (MIC): 0.5, 0.75, 1.0, 1.25, 1.5, 1.75, 2.0 mcg/ml]. We determined patient background (age, sex, body weight, colonization with MRSA, duration of central venous catheterization, and day of onset day after admission); laboratory data (white blood cell count, serum C-reactive protein, and serum albumin); underlying diseases (malignancy, diabetic mellitus, and renal failure); source of infection (soft tissue and bone, central nervous system, respiratory tract, intra-abdominal, urinary tract, and medical devices); initial anti-MRSA agent (VCM, teicoplanin, arbekacin, linezolid, or daptomycin); and dosing period. We also analyzed the factors contributing to 30-day mortality.

RESULTS

Seventeen cases had insufficient data, which left 117 cases for analysis. Eighty-three cases were included in the survival group. No significant differences were observed between the survival and mortality groups for patient background, laboratory data, underlying diseases, source of infection, and initial anti-MRSA agent. Table 1 shows the result of multivariate analysis. VCM MIC (≥1.5 mcg/ml) and duration of initial anti-MRSA treatment did differ significantly.

CONCLUSION

In this study, VCM MIC was closely associated with 30-day mortality. Many recent reports have demonstrated a trend towards gradual increase in VCM MIC ('MIC creep'). In addition, high mortality for MRSA BSI was reported when VCM was used to treat infections caused by strains with high VCM MIC. Similar results were demonstrated in the present study. At the annual congress, we will present additional data for cases in 2013.