

Risk Factors for Mortality in Patients Treated with Colistin Monotherapy for Carbapenem-Resistant *Acinetobacter baumannii* Infections

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Background

Colistin is a crucial antibiotic for treating infections caused by carbapenem-resistant Gram-negative organisms, including carbapenem-resistant *A. baumannii* (CRAB). However, its use is associated with significant morbidity and mortality.

Objectives

This study aimed to identify the risk factors for 30-day mortality in patients treated with colistin monotherapy for CRAB infections.

Methods

A retrospective cohort study was conducted at Nakormping Hospital, including 223 adult patients treated with intravenous colistin monotherapy between January 2015 and October 2021. Univariate and multivariate analyses were performed to identify independent predictors of 30-day mortality.

Results

Table 1. Univariate and multivariate logistic regression analysis of clinical factors associated with the occurrence of mortality rate.

Variable	Univariate analysis		Multivariate analysis	
	OR (95% CI)	P-value	aOR (95% CI)	P-value
Age	1.03 (1.01–1.046)	0.001	1.02 (0.99–1.04)	0.073
Charlson score	1.20 (1.07–1.35)	0.002	1.14 (0.94–1.38)	0.188
Malignancy	3.24 (1.67–6.30)	0.001	3.17 (1.14–8.81)	0.027
Duration of colistin treatment	0.98 (0.93–1.04)	0.577	1.10 (0.99–1.21)	0.057
Total dose of colistin	0.99 (0.99–0.99)	0.005	0.99 (0.99–0.99)	0.004
Diabetes mellitus	0.74 (0.35–1.56)	0.431	0.53 (0.18–1.54)	0.243
Nephrotoxicity	2.21 (1.26–3.87)	0.006	2.82 (1.30–6.15)	0.009
Mechanical ventilation	5.20 (2.54–10.65)	0.001	3.39 (1.39–8.27)	0.007
Septic shock	6.69 (3.64–12.30)	0.001	4.70 (2.21–9.99)	0.001
ICU status	5.95 (3.25–10.89)	0.002	3.19 (0.52–19.79)	0.212

Results

The total dose of colistin was associated with a decreased risk of mortality. In multivariate analysis, malignancy, nephrotoxicity, mechanical ventilation, and septic shock were significantly associated with an increased risk of mortality. Conversely, the total dose of colistin was associated with a decreased risk of mortality.

Conclusions

This study highlights the importance of considering these risk factors in the management of CRAB infections treated with colistin monotherapy. Identifying patients at higher risk of mortality can guide treatment decisions and improve outcomes in this challenging population.

References

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