

EV0094

ePoster Viewing

Antimicrobials: epidemiology of MDR Gram-negatives

Clinical characteristics and outcomes in patients with nosocomial pneumonia due to susceptible, resistant, and multidrug-resistant *Pseudomonas aeruginosa*

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Objectives: This international study evaluated hospitalized patients with nosocomial pneumonia (NP) due to susceptible, resistant, and multidrug-resistant (MDR) *Pseudomonas aeruginosa*.

Methods: This retrospective study collected data on 656 hospitalized patients with a clinical diagnosis of NP (hospital-associated pneumonia, ventilator-associated pneumonia (VAP) and health care-associated pneumonia) due to *P. aeruginosa*. Susceptibility was as described in medical records based on local laboratory results. MDR was defined as resistant or intermediate susceptibility to at least 1 drug in ≥ 3 anti-pseudomonal drug classes.

Results: 224 patients (34%) had infections with susceptible *P. aeruginosa* (S); 218 (33%) resistant or intermediate susceptibility to one or two antibacterial drugs (R), and 214 (33%), MDR *P. aeruginosa*.

Patients in the R and MDR groups were younger, were more likely to have received prior antibiotics than S patients, but there were no differences in recent hospitalization. A majority of all patients required mechanical ventilation. Approximately half of the patients with R and MDR *P. aeruginosa* had VAP. Patients with R and MDR *P. aeruginosa* had higher rates of admission to the intensive care unit than S patients. Patients with MDR *P. aeruginosa* received antibiotic therapy for a longer duration than S or R. In-hospital mortality was higher in the R and MDR groups, with longer lengths of stay among survivors.

Conclusion: Initial appropriate antibiotic therapy is critical for clinical success; the ability for *P. aeruginosa* to develop resistance to multiple classes of antibacterial agents presents a serious challenge. NP due to resistant *P. aeruginosa* is associated with increased mortality and resource utilization. A concerted effort by key stakeholders (health care providers and institutions, payers, pharmaceutical companies, policy makers, and regulators) is required to limit further increases in antibiotic resistance and associated societal costs.

Patient Characteristics and Outcomes in Nosocomial Pneumonia Due to Susceptible, Resistant, and Multidrug-resistant *Pseudomonas aeruginosa*

		Susceptible (N=224)	Resistant to 1-2 Drug Classes (N=218)	MDR (N=214)
Age (years)*	Mean (SD)	62 (15)	60 (16)	54 (18)
Antibacterials in prior 30 days*	n/N (%)	60/146 (41%)	70/146 (48%)	94/167 (56%)
Hospitalized in prior 6 months	n/N (%)	114/196 (58%)	94/171 (55%)	118/196 (60%)
Ventilator-associated pneumonia*	n (%)	89 (40%)	135 (62%)	100 (47%)
Admitted to ICU*	n (%)	134 (60%)	180 (83%)	171 (80%)
Mechanical ventilation	n (%)	198 (88%)	197 (90%)	191 (89%)
Number of antibacterials during hospitalization*	Median (IQR)	3 (1)	2 (1)	3 (2)
Duration of antibacterial therapy during hospitalization (days)*	Median (IQR)	16 (19)	13 (18)	20 (26)
Length of stay, survivors (days)*	Median (IQR)	29 (37)	30 (42)	43 (48)

In-hospital mortality*	n (%)	61 (27%)	86 (39%)	99 (46%)
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* $P < .05$