Polymyxin B- Compared to Beta-Lactam- Based Regimens for the Treatment of Carbapenem-Resistant Gram Negative Bacterial Pneumonia

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Abstract
Infections caused by multiresistant (MDR) gram-negative bacteria (GNB) are an increasingly common problem in hospitalized patients. In conventional antimicrobial practice in the USA, polymyxin B (PB) is considered the drug of last resort for the treatment of MDR GNB. The main concern with PB is its high rate of nephrotoxicity and mortality. In a recent study by Saez et al., N=95 patients met inclusion criteria; mean age was 65 years and 68% were male. Cultures were polymyxin susceptible in 70% of patients and polymyxin resistant in 30%. Clinical success at the end of PB treatment was 50%. 30-day mortality was 49% and 24% in the PB and BL groups respectively (p=0.038). This was not statistically significant in multivariable model. A PB-based regimen for the treatment of MDR GNB patients resulted in significantly higher mortality and lower rates of clinical success compared to those received a beta-lactam regimen. Poly-potent antibiotics are also recommended in these situations as limited options are available.

Methods
New methodologies and higher doses of PB were used in these studies in order to limit duration of treatment. PB is considered in these situations as limited options are available.

Conclusions
Clinical success at the end of PB treatment was 50%. 30-day mortality was 49% and 24% in the PB and BL groups respectively (p=0.038). A PB-based regimen for the treatment of MDR GNB patients resulted in significantly higher mortality and lower rates of clinical success compared to those received a beta-lactam regimen. Poly-potent antibiotics are also recommended in these situations as limited options are available.

References