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Abstract (poster session)

Nephrotoxicity associated with colistin therapy: a comparative analysis of older and younger adults

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Objectives: Colistin has become the mainstay for the treatment of infections due to carbapenem-resistant (CR) Gram-negative bacilli (GNB). Recent evidence has confirmed high rates of nephrotoxicity in the 30-50% range among patients receiving colistin. However, no analyses have analyzed nephrotoxicity due to colistin in older adults, and none have determined the independent impact of age on nephrotoxicity. The objective of this analysis was to determine the independent effect of increased age (>=65 years old) on the incidence of colistin nephrotoxicity and mortality. Methods: This was a sub-analysis of a previously described cohort of 126 patients treated with colistin from 2005-2009. The cohort was divided into older pts (>= 65 yrs) and younger pts (< 65 yrs). Data collected included patient demographics, comorbidities, colistin dosage, duration of therapy, and incidence and degree of acute kidney injury as defined by the RIFLE criteria. A propensity score was developed measuring the likelihood of a subject to be > 65 years old. To evaluate the independent impact of age on toxicity and mortality, a multivariate analysis was performed analyzing the impact of older age on risk for nephrotoxicity and mortality after controlling for the propensity score. Results: Of the 126 patients in the cohort, 50 (40%) were older and 76 (60%) were younger. Nephrotoxicity occurred in 21 (42%) of older patients and 33 (43%) of younger patients (p = 0.88). 41 (33%) of patients died, including 17 (35%) older adults and 24 (32%) younger adults (p= 0.72). Older patients were more likely to have received a loop diuretic, >= 3 concomitant nephrotoxins, have a higher Charlson comorbidity index, a history of peripheral vascular disease and myocardial infarction. They were less likely to have diabetes, reside in an intensive care unit, and to receive high dose colistin therapy. After controlling for the propensity score based on theses variables, age >=65 was not associated with increased risk of nephrotoxicity (OR 0.77, 95% CI 0.32 – 1.88) or mortality (1.07, 95% CI 0.43 – 2.72). Conclusions: Age >= 65 was not independently associated with increased risk for colistin associated nephrotoxicity or mortality. When older adults require colistin therapy for CR-GNB it is imperative that that clinicians are equally as aggressive with regards to dose and concomitant antimicrobial agents as they would be in younger patients so as to optimize colistin therapy.