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Paper Poster Session

Travel medicine and international health

Economic cost of combination therapy to treat XDR Gram-negatives: a knockout blow to the developing world!

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Background: Increasing prevalence of Carbapenem Resistant *Enterobacteriaceae* (CRE) is a serious global menace with increased morbidity and mortality of patients infected with these bacteria. Drug resistant infections, including CRE can also increase the financial cost of health care delivery. Though the academic world is still debating the superiority of colistin based combination therapy (CCT) over colistin monotherapy, the practice of CCT, especially with carbapenem is a very common and even a recommended practice in centres with high carbapenem resistance. The aim of this study was to evaluate the economic cost treating XDR GNB bacterial infection with various combinations.

Material/methods: We did retrospective analysis of 55 patients with CRE bacteremia from a tertiary care oncology and BMT centre in India (Jan 2011-Dec 14) .The 28-day mortality data of these patients is already published elsewhere, with colistin based monotherapy (CM) and Colistin based combination (CCT) arms having similar rates. Case records of these patients were studied to calculate the number of vials of various antibiotics (colistin, carbapenem and tigecyclin) used to treat these infections. Cost per vial was collected from pharmacy records.

Results: The mean cost of colistin monotherapy (n=16 patients) per patient for the total duration of antibiotic course was 14,397 US dollars. In the combination arm (n=39), mean antibiotic cost was 2437 US dollars per patient, (carbapenem plus colistin arm (n=23) mean cost was 2245 US dollars, colistin plus carbapenem plus tigecycline arm (n=11) was 299 and colistin plus tigecycline (n=5) 2095 US dollars respectively).

Conclusions: Colistin based combination therapy is undoubtedly more expensive than colistin monotherapy, despite inconclusive data on the superiority of CCT over colistin monotherapy. In countries like India, where resources are already limited and the prevalence of CRE the highest, cost of combination therapy will add to other costs of treating CRE infections. Prospective randomized trials are needed on this topic so that the practice of combining last resort and expensive antibiotics could either be justified or be discontinued