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CLINICAL OUTCOME AND RISK FACTORS ASSOCIATED WITH COLISTIN-INDUCED ACUTE KIDNEY INJURY

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Objectives : Colistin is an important antibiotic in the treatment of multidrug resistant organisms such as Acinetobacter baumannii and Pseudomonas aeruginosa, but acute kidney injury (AKI) due to nephrotoxicity is still a problem. We investigated the incidence of colistin-induced AKI by KDIGO guideline, clinical outcome, and risk factors associated with AKI after colistin treatment.

Methods : We retrospectively analyzed 96 patients with the use of colistin during hospitalization between December 2014 and July 2015. We compared clinical findings between AKI group and non-AKI group matched age, baseline kidney function, and diabetes mellitus as a co-morbidity.

Results : The mean age at hospitalization was 68 ± 12 years. The median length of hospital stay was 36 days (interquartile range [IQR] 23, 69). The number of patients admitted to the ICU was 69 (71.9%) and the median duration of ICU stay was 22 days (IQR 7, 46). Both the duration of hospital stay and the ICU stay were longer in the AKI group than in the non-AKI group. The incidence of AKI was significantly higher in patients with malignancy. Most common cause of using colistin was pneumonia (61.5%), main microorganism was Acinetobacter baumannii (80.8%), and representative concomittent nephrotoxic drug was vancomycin (65.4%) in AKI group. Among 65 patients in AKI group, 49 (71%) occurred in the ICU and 22 (44.9%) patients died. Acute Physiology and Chronic Health Evaluation II score did not significantly differ between two groups. The cumulative dose of colistin was significantly higher in AKI group than non-AKI group (3,374 ± 2,254 mg vs 2,419 ± 1,732 mg, P=0.040). In multivariate analysis, the independent risk factors for colistin-induced AKI were longer hospital stay, malignancy as a co-morbidity, and higher cumulative dose of colistin.

Conclusions : The incidence of AKI was higher when the cumulative dose of colistin was higher or hospital stay was longer. We should pay attention to the appropriate dose of colistin and the risk factors of AKI for prevention of colistin-induced AKI.

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Keywords : Acute kidney injury, Colistin, Risk factor