Vancomycin-induced acute kidney injury in elderly Chinese patients: A Single Center Cross-Sectional Study

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Aims: The objective was to investigate current situation and risk factors of vancomycin (VAN)-induced acute kidney injury (VI-AKI) in elderly Chinese patients, to assess the outcomes and its risk factors of patients who developed VI-AKI, in order to provide suggestions for improving the prevention and treatment of VI-AKI in elderly Chinese patients.

Method: We retrospectively identified elderly inpatients who received more than 3 doses of VAN therapy. We compared the VI-AKI with NO-AKI patients. The definition of VI-AKI is developing AKI during VAN therapy or within 3 days after withdrawal of VAN.

Results: 647 of the 862 elderly inpatients were included. Among those excluded, (89.3%, 192/215) were excluded because of a lack of data on serum creatinine (SCr). Among the included patients, 32.5% (210/647) patients received TDM during VAN therapy. The inadequate TDM rate was 66.9% (424/634) and rate of correct TDM was 3.9% (25/634). 102 patients had confirmed VI-AKI, with an incidence of 15.8% (102/647). Multiple logistic regression analysis revealed that hyperuricemia ([OR]=3.045;p=0.000), mechanical ventilation ([OR]=1.906;p=0.022) and concomitant vasopressor therapy ([OR]=1.919,p=0.027) were independent risk factors for VI-AKI; in addition, serum albumin valley ([OR]=0.885;p=0.000) was determined to be independent protective factor for VI-AKI.

Conclusions: The elderly Chinese patients treated with VAN exist the situations below: insufficient monitoring of SCr, inadequate VAN TDM rate and incorrect monitor time. We recommend hospital managers to increase investment in clinical pharmacists to strength professional management. Patients concomitant with hyperuricemia, mechanical ventilation and vasopressor therapy should be paid more attention and a higher serum albumin was more recommend.