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THE USE OF ANTIBIOTIC MONITORING DATABASE TO GAIN INSIGHT INTO SAFER PRESCRIBING OF VANCOMYCIN AND AMINOGYCOSIDES

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Achieving targeted pre-dose concentrations of vancomycin and aminoglycosides is crucial for efficacy and safety. Initial doses of those antibiotics are adjusted in patients with impaired renal function but fixed dosing is used otherwise. The aim of this study is to use antibiotic monitoring data to gain insight on how prescribing can be better tailored to target the desired concentrations Methods: This is a retrospective analysis of a five-years antibiotic monitoring database from a referral tertiary care hospital in Western Saudi Arabia. Multivariate logistic regression -with robust standard error as appropriatewas used to detect associations between pre-dose antibiotic concentrations being below or above targets and age, gender, and creatinine clearance, as estimated retrospectively from the database. Results: There were 1088 and 9678 pre-dose concentration records for aminoglycosides and vancomycin, respectively. For amikacin and gentamicin, respectively 46% and 59% of pre-dose concentrations were above 5 and 1 micrograms/ml. and for vancomycin 18% were below 10 and 30% were above 20 micrograms/ml. Regression showed estimated creatinine clearance to be an independent predictor of vancomycin and aminoglycoside plasma levels (p< 0.001 for both). This was true with initial and subsequent level measurements and across wards (oncology, ICU and others). Gender showed significant association with vancomycin level. Conclusion: A substantial proportion of patients can benefit from snugger tailoring of vancomycin and aminoglycoside doses based on creatinine clearance estimation. The current dataset suggests a model that can be validated in datasets from other populations and then may be used to guide dosing.

Biography

Mohamed kheder alzahrani is a medical graduate his age is 25 year old, he participated in many research as author and co-auther, he had the first place rank in king Abdullah medical city conference.

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