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Monitoring the serum concentration of Vancomycin in patients with renal failure

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Vancomycin is a glycopeptide antibiotic, produced by *Staphylococcus orientalis*. It is used for the treatment of aerobic gram positive infections, especially for the treatment of Methicillin Resistant Staphylococcus Aureus (MRSA) infections. Early reports regarding the possibility of nephrotoxicity and ototoxicity led to concern about the use of vancomycin and the need to monitor serum concentrations in patients with varying renal functions. This study was aimed to monitor the vancomycin trough levels in patients with various degrees of renal function and to check the appropriateness of dosage regimen used in renal impairment patients. Serum samples were collected from patients with renal impairment on vancomycin treatment and analyzed using High Performance Liquid Chromatography (HPLC). In this study vancomycin average trough level was found to be 22.4±16.00 µg/ml. As per the results, the drug concentrations of 30.77% of patients on Vancomycin therapy were found to be within the therapeutic range (10-20 µg/ml), while 15.38% were in sub therapeutic concentration (<10 µg/ml) and 53.85% were observed to have drug concentrations above the therapeutic range >20µg/ml. Due to these variations in serum trough levels in various stages of renal impairment, it is recommended to adjust the vancomycin dose based on Therapeutic Drug Monitoring to improve the probability of achieving optimal target serum vancomycin concentrations and better therapeutic outcome. Furthermore, to establish the relationship between administered dose and measured blood levels in various degrees of renal function, more samples are to be analyzed.

Biography

Sechana K S is currently pursuing her Doctor of Pharmacy (PharmD) from PSG College of Pharmacy, Coimbatore, affiliated to the Dr MGR Medical University, Chennai and Tamilnadu. She has actively participated in various national and international conferences. She and her team members have been awarded a grant for the above mentioned project by Tamilnadu Pharmaceutical Sciences Welfare Trust.

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