

CLINICAL PHARMACOKINETICS OF VANCOMYCIN IN NEUTROPENIC PATIENTS

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OBJECTIVES

Vancomycin dosage should be a 25% higher than standard dosage in neutropenic-patients due to increased clearance of vancomycin in this population. Renal hyperfiltration is considered as a possible mechanism.



- ✓ Prevalence of sub-therapeutic drug exposure under Therapeutic Drug Monitoring (TDM)
- ✓ TDM-dosage-adjustments.

MATERIALS and METHODS



Retrospective and descriptive study 2010-2019



Hematological disease patients with neutropenia and vancomycin TDM by pharmacist



- ✓ CrCl (Cockcroft-Gault formula)
- ✓ Initial dose
- ✓ Dose adjustments
- ✓ First two trough levels

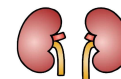


We considered:

RENAL IMPAIRMENT → CrCl < 60 ml/min
OPTIMAL DOSE → 15-20 mg/kg/dose
OPTIMAL TROUGH LEVEL → 10-20 mcg/mL

RESULTS

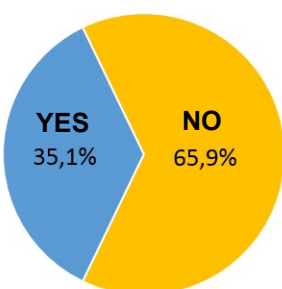
N: 41 patients → 58,5% Males; Age: 62,9 (IQR 19 – 48)



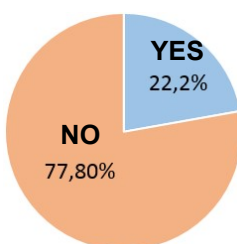
CrCl < 60 ml/min: 20%

BEFORE TDM DOSAGE ADJUSTMENTS

Initial Therapeutic levels



Optimal dose



TDM DOSAGE ADJUSTMENTS



Shorter dosing interval

Higher dose

CONCLUSIONS

- ✓ More than a half of patients obtained sub-therapeutic vancomycin levels due to initial underdosage.
- ✓ Nevertheless, 22,2% required ≥25% increase dose to achieve target drug-concentration despite of an initial therapeutic regimen.

