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Poster

## [P25-4] P25-4: Anti-infective drugs (4): Vancomycin

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### [P25-4-5] Optimizing vancomycin dosage with a therapeutic drug monitoring program in thrice-weekly hemodialysis patients

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#### Background

The treatment of patients with vancomycin and end-stage renal (ESR) function with regular hemodialysis schedule (thrice-weekly-HD) is complicated not only because therapeutic drug monitoring (TDM) is needed in order to achieve a target trough concentration (C<sub>p</sub>), but also because of its irregular dosage regimen. Our objective was to evaluate a vancomycin TDM program in order to optimize the dosage in ESR patients treated with thrice-weekly hemodialysis to achieve stable vancomycin C<sub>p</sub> the whole week.

#### Methods

Retrospective observational study. Patients over 18 years with ESR and thrice-weekly-HD, treated more than one week with vancomycin and at least one TDM report were included.

TDM protocol: a) an initial dose of 500 mg or 1000 mg iv upon clinician's criteria; b) TDM and dosage adjustment with C<sub>p</sub> before the second dose of vancomycin.

TDM was based on Bayesian estimation of the pharmacokinetic parameters (PKSABBOTT v1.10) by Clinical Pharmacokinetics Unit.

#### Results

38 patients (36.8%/63.2% w/m) were included. The average age was 61 years (CI95%: 57-65) and weight was 69 kg (CI95%: 63-74). The indications were: tissue and skin infection (52.6%), bacteremia (26.3%), respiratory infection (10.5%) and unknown fever (10.5%). Median (p25-75) basal creatinine and CRP was: 6.2 mg/dL (5.9-7.3) and 6.2 (1.7-15.8), respectively. The median (p25-75) total and per kilogram initial dose was 1000 mg (1000-1000) and 15.8 mg/kg (11.0-18.2). Median basal pre-hemodialysis concentration after the initial dose was 12.1 mg/L (p25-75: 10.2-13.9). A new dosage regimen was initiated after the first TDM in 100% of patients. After dosage adjustment, the median (p25-75) total and per kilogram dose was: 500 mg (500-750) and 9.0 mg/kg (7.1-13.4) on Monday-Wednesday; and 1000 mg (750-1250) and 15.8 mg/kg (11.0-18.2) on Friday, with mean C<sub>p</sub> pre-hemodialysis was 15.0 ng/mL (CI95%: 14.1-16.0).

#### Conclusions

TDM of vancomycin is required in hemodialysis patients. In our population, to achieve target C<sub>p</sub> after the initial dose it is necessary to administer a loading dose higher than 15 mg/kg (probably 20 mg/kg). To maintain target C<sub>p</sub> pre-hemodialysis stable, it is necessary to increase the dose of vancomycin after last hemodialysis session of the week (ie. on Friday) in every patient by 50% (p25-75: 45.8-66.7).

