4CPS-178 THERAPEUTIC DRUG MONITORING OF GENTAMICIN AFTER PRE-DIALYSIS ADMINISTRATION

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Background and importance With the increase of multidrug-resistant Gram-negative bacteria, aminoglycoside therapy is frequently essential, and its management is especially problematic in dialysis patients.

Aim and objectives The aim was to calculate the mean dose of gentamicin required to optimise pharmacokinetic/pharmacodynamics (PK/PD) parameters in intermittent haemodialysis patients to determine an initial dosing protocol.

Material and methods We performed a retrospective observational study including patients treated with gentamicin from January 2009 to April 2020, who were on a 4-hour haemodialysis programme three times per week. Gentamicin was administered 1 hour pre-dialysis and monitoring was performed by drawing a trough level (pre-dose) and a peak level (30 min after the infusion ended) at each administration. Gentamicin concentration was analysed by *chemiluminescent* microparticle immunoassay (CMIA).The estimation of kinetic parameters was performed by Bayesian methods with a single-compartment population model implemented in the Abbottbase-Pharmacokinetic System. Dialysis was introduced into the model as a disposition factor that increases drug clearance only during the 4 hours of dialysis. Data were evaluated using chi-square test. Significance was designated at $p<0.05$.

Results We identified 19 dialysis patients on gentamicin treatment. Gentamicin was used in 7 cases to treat infections caused by carbapenemase-producing *Klebsiella pneumoniae*, 8 skin-and-soft tissue infections, 5 urinary tract infections, 3 bacteraemias, 2 pneumonias and 1 endocarditis. Mean and range of age was 66 (45–80) years, weight 67.89 (44–88) kg and haematocrit 29.6% (22%–38%).The ratio of ABW/IBD was 1.04. Nine patients used the FX80 dialyser, 7 used the FX10 and 3 other dialysers, with a mean filtration rate of 2200 mL. In all patients residual diuresis was nil.Treatment duration was variable, 17 (4–47) days. Gentamicin was initiated at a mean dose (±SD) of 2.35±0.52 mg/kg (80–240 mg). After monitoring, 76.5% of patients achieved optimal levels of both Cmax (>8 µg/mL) and Cmin (<2 µg/mL), compared to 26.7% at baseline ($p<0.001$). The mean dose to maintain target values was 2.56±0.53 mg/kg, being the mean kinetic parameters: Vd=0.33±0.1 L/kg; inter-dialysis CL=0.46±0.16 L/hour and half-life=33.65±17.29 hours.

Conclusion and relevance To optimise the PK/PD parameters of gentamicin in patients undergoing haemodialysis, an initial dose of 2.5 mg/kg 1 hour pre-dialysis is proposed, without the need for loading doses. However, due to its complex management and high pharmacokinetic variability, strict monitoring from the first dose is essential.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-179 DESCRIPTION AND FOLLOW-UP OF THE USE OF EMTRICITABIN/TENOFOVIR FOR HIV PRE-EXPOSURE PROPHYLAXIS

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Background and importance The Spanish National Health System agreed to finance emtricitacin/tenofovir (FTC/TDF) in November 2019 with an indication of pre-exposure prophylaxis (PrEP) as an HIV prevention measure. PrEP consists of taking one FTC/TDF tablet daily. The role of hospital pharmacist in the treatment of HIV-negative individuals is to follow up by monitoring adherence, interactions and reasons for discontinuation of treatment.

Aim and objectives To describe the use of FTC/TDF for PrEP in a tertiary hospital and follow-up of candidate HIV-negative individuals from the start of therapy.

Material and methods Retrospective, observational and Hospital ID Clinic study including all non-infected individuals who started treatment from December 2019 to April 2021.

Variables analysed: age, sex, risk behaviours, persistence, treatment duration, treatment withdrawal reason, adherence (adherent if ≥95%) and reasons for low adherence.

Data were obtained from the electronic medical records and outpatient dispensing module.

Results Eighty-eight HIV-negative individuals were included, 98% (86/88) were men, all of them being men practising sex with men (MSM). The mean age was 40±9 years.

Persistence to treatment (mean persistence = 6 months) was 91% (80/88). The remaining 9% (8/88) abandoned the treatment. The reasons for dropping out were: 4/8 adverse reactions (AR) (3 gastrointestinal complaints and 1 renal toxicity), 1/8 absence of risky sexual practices (= stable partner), 1/8 lockdown and 2/8 unidentified due to lack of follow-up.

82% of the non-infected people were adherent to treatment, being the mean adherence to treatment 95%. The mean adherence of the individuals considered non-adherent was 76%. The reasons for poor adherence were: 3/14 gastrointestinal AR (flatulence and abdominal pain), 1/14 absence of risky sexual relations, 1/14 lockdown and 9/14 unidentified due to lack of follow-up.

Conclusion and relevance The main profile of HIV-negative individuals in treatment with PrEP is MSM.

In general, both persistence and adherence to treatment were good. However, considering the short duration of treatment, a long-term study should be performed.

Results show that the most frequent reasons for treatment withdrawal and low adherence are AR.

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