clinical cases DDIs

Date of report 23 Dec 2020

Reported case interaction between **Tenofovir-AF** and **Gentamicin**

Drugs suspected to be involved in the DDI

Perpetrator
Tenofovir-AF

Daily Dose
10 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Unknown

End date
Unknown

Gentamicin

Daily Dose
42 (mg)

Dose adjustment performed
No

Administration Route
Intravenous

Start date
Unknown

End date
Unknown

Complete list of drugs taken by the patient

Antiretroviral treatment

Darunavir/Cobicistat/Emtricitabine/Tenofovir-AF

Complete list of all comedications taken by the patient, included that involved in the DDI

gentamicin, valaciclovir, pantoprazole, olanzapine, fluconazole, citalopram, oxycodone, paracetamol, dexamethasone, cytarabine, carboplatin, piperacillin, tazobactam

Clinical case description

Gender

Male

Age

46

eGFR (mL/min)

>60

Liver function impairment

No

Description

Patient on stable TAF-based antiretroviral treatment who developed proximal tubulopathy when treated with gentamicin for febrile neutropenia in the context of relapsed Hodgkin lymphoma. Within 24 h after starting gentamicin, piperacillin and tazobactam, the patient developed marked hypokalaemia, hypophosphatemia requiring intravenous replacement therapy. The patient had proteinuria, glycosuria and evidence of marked urinary elcetolyte wasting, consistent with acute proximal tubular dysfunction. Eleven days after stopping gentamicin, the serum biochemistry normalised. The urinary electrolyte wasting and proteinuria had improved and the glycosuria had resolved.

Clinical Outcome

Toxicity

Drug Interaction Probability Scale (DIPS)

Score

2 - Possible

Editorial Comment

Mitochondrial dysfunction has been associated with both aminoglycoside and tenofovir-asssociated nephrotoxicity so a synergistic mitochondrial toxicity could be a possible explanation for the occurrence of nephrotoxocity. In addition, sepsis and lymphopenia could potentially led to the accumulation of tenofovir (derived from TAF) and gentemicin in the proximal tubular cells thereby causing mitochondrial toxicity and proximal tubular dysfunction. This case has been published by Heron JE et al. BMC Nephrology 2020.

University of Liverpool Recommendation

- No clinically significant interaction expected

For more information click here