clinical cases DDIs

Date of report 04 Jul 2024

Reported case interaction between **Bictegravir** and **Ursodeoxycholic acid**

Drugs suspected to be involved in the DDI

Victim
Bictegravir

Daily Dose
50 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
March 31, 2023

End date
Ongoing

Perpetrator
Ursodeoxycholic acid

Daily Dose
600 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Unknown

End date
Ongoing

Complete list of drugs taken by the patient

Antiretroviral treatment

Bictegravir/Emtricitabine/Tenofovir-AF

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

Ursodeoxycholic acid 300 mg/12 hours, mesalazine

Clinical case description

Gender

Male

Age

44

eGFR (mL/min)

>60

Liver function impairment

No

Description

44-year-old male with HIV infection diagnosed in August 2012 started ART with EFV/FTC/TDF in February 2013 (CD4 301 cells/mm3, viral load 160,000 c/mL). ART was subsequently switched to RPV/FTC/TDF in 2016, and later to BIC/FTC/TAF to avoid interactions with proton pump inhibitors.
Other comorbidities included ulcerative colitis on treatment with mesalazine and primary sclerosing cholangitis on treatment with ursodeoxycholic acid.
In vitro studies suggest that ursodeoxycholic acid is a CYP3A inducer. The Liverpool website lists the combination of bictegravir and ursodeoxycholic acid as orange (potential interaction), and recommends avoiding the coadministration. Despite this possible interaction, this person has received both drugs for 11 months while maintaining virological suppression.

Clinical Outcome

No unwanted outcome

Editorial Comment

Ursodeoxycholic acid is a CYP3A4 inducer, and significant reduction of certain CYP3A4 substrates (i.e. nitrendipine or dapsone) has been reported in human studies. Therefore, ursodeoxycholic acid could reduce BIC exposure, with the consequent risk of virologic failure and development of resistance mutations. Of interest, the literature reports one clinical case showing undetectable RPV trough concentrations one month after starting treatment with ursodeoxycholic acid (Cattaneo D, et al. Eur J Clin Pharmacol. 2020; doi:10.1007/s00228-019-02825-8). No effects are expected on FTC or TAF as they are not metabolized by CYP3A4.
In the present case, BIC/FTC/TAF and ursodeoxycholic acid were co-administered for 11 months without evidence of virological failure. Possibly, the fact that BIC is metabolized equally by CYP3A4 and UGT1A may have mitigated this drug interaction, unlike other antiretrovirals which are exclusively metabolized by CYP450, such as rilpivirine.

University of Liverpool Recommendation

■ Potential interaction - may require close monitoring, alteration of drug dosage or timing of administration

For more information click here

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