clinical cases DDIs

Date of report 19 May 2023

Reported case interaction between **Bictegravir** and **Oxcarbazepine**

Drugs suspected to be involved in the DDI

Victim
Bictegravir

Daily Dose
50 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Feb. 8, 2022

End date
Ongoing

Perpetrator
Oxcarbazepine

Daily Dose
600 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Sept. 12, 2022

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

Oxcarbazepine, prednisone 30 mg/day, tetrabenazine 25 mg tid

Clinical case description

Gender

Female

Age

43

eGFR (mL/min)

>60

Liver function impairment

No

Description

The patient is a 43 year-old female. Weight 65 kg, Heigth 155 cm, BMI 27.1. HIV infection diagnosed in 2003, nadir CD4 627, failed on a TDF/FTC+NVP regimen in 2012, since then good virological control with INSTI-based regimens. Currently on BIC/FTC/TAF, since 2020. Apart from HIV, she has hypertriglyceridemia that has been managed with diet and exercise.

The patient was admitted in July 2022 to another hospital for a hemimotor syndrome with a complete study (SAT doppler, cranial CT, cranio-medullary MRI, PET-CT, TTE, LP) without significant findings except lesion in cerebellar peduncle oriented as inflammatory/immune origin, with positive anti-Zic4. She was discharged with steroids (prednisone). She also presented epileptic seizures that were treated with oxcarbazepine.

Co-administration of oxcarbazepine and BIC/FTC/TAF is contraindicated. Oxcarbazepine is an inducer of CYP3A, UGT1A1, and P-gp and is expected to decrease both TAF and bictegravir exposures. It was discussed with the neurologists in charge of the patient but they preferred not to change the treatment.

In our hospital it is not possible to perform therapeutic drug monitoring and after analyzing potential antiretroviral options, we decided to continue with BIC/FTC/TAF and close monitoring. Patient had failed to NNRTI in the past (and doravirine is also contraindicated with oxcarbazepine), boosted PIs would also have risk of DDI and also might worsen the hypertriglyceridemia and DTG bid might have been an option, but the patient did not want bid treatment and agreed on close monitoring. Eight months after, still receiving both drugs, the patient has an undetectable viral load.

Clinical Outcome

No unwanted outcome

Editorial Comment

Oxcarbazepine is a drug with a high risk interaction profile due to it is an inductor of CYP3A, UGT1A1, and P-g. Therefore, it is difficult to find an ART options when oxcarbazepine is needed. In this case, despite the potential interactions with BIC/FTC/TAF no viral rebound was observed. However, a close

monitoring should be recommended and, if possible, plasma bictegravir concentrations might be useful.
Although similarities between bictegravir and dolutegravir, the interactions profile is slightly different. Coadministration of BIC/FTC/TAF and oxcarbazepine is contraindicated since oxcarbazepine may decrease bictegravir and tenofovir alafenamide plasma concentrations due to induction of CYP3A, UGT1A1, and P-g. Dolutegravir exposure might be also reduced due to induction of UGT1A1 and CYP3A. However, the effect of strong inductors on dolutegravir concentrations can be overcome by administering dolutegravir 50 twice daily (as it is recommended in the EMA Summary of Product Chracteristics)

University of Liverpool Recommendation

- These drugs should not be coadministered

For more information click here

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