clinical cases DDIs

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Reported case interaction between **Darunavir** and **Oxcarbazepine**

Drugs suspected to be involved in the DDI

Victim
Darunavir

Daily Dose
1200 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
March 18, 2009

End date
Ongoing

Perpetrator
Oxcarbazepine

Daily Dose
1200 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
July 3, 2009

End date
Ongoing

Complete list of drugs taken by the patient

Antiretroviral treatment

Raltegravir
Etravirine

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

Oxcarbazepine 1200 mg daily
Levetiracetam 1000 mg daily
Diazepam 5 mg daily
Atorvastatin 10 mg daily
Enalapril 20 mg daily
Tamsulisin 0.4 mg daily
Folic acid 5 mg daily

Clinical case description

Gender

Male

Age

61

eGFR (mL/min)

>60

Liver function impairment

No

Description

A 61-year-old man was diagnosed with HIV in 1999. Antiretroviral therapy (ART) was initiated in 2000 with stavudine (d4T), lamivudine (3TC), and nevirapine (NVP). In 2004, after virological failure with resistance to both NRTIs and NNRTIs, salvage therapy was started with tenofovir disoproxil fumarate (TDF), didanosine (ddI), and lopinavir/ritonavir (LPV/r).
In 2008, following another virological failure, ART was switched to raltegravir (RAL) 400 mg twice daily, etravirine

(ETR) 200 mg twice daily, and darunavir/ritonavir (DRV/r) 600/100 mg twice daily.
The patient had a history of haemorrhagic stroke in 2003. In 2009, he was diagnosed with secondary epilepsy and was prescribed oxcarbazepine.
Oxcarbazepine is a moderate inducer of CYP3A4 and a weak inducer of UGT1A1, which can lower plasma concentrations of DRV, ETR, and RAL. However, given the good tolerability of the regimen and the limited alternative options, ART was maintained. Over the following years, plasma HIV RNA remained adequately suppressed.

Clinical Outcome

No unwanted outcome

Editorial Comment

This case illustrates a challenging clinical scenario: when antiretroviral therapy (ART) cannot be modified due to limited active drug options, and the required comedication is an inducer that interacts with nearly all potential alternatives. Oxcarbazepine is a moderate inducer of CYP3A4 and a weak inducer of UGT1A1, raising concern for reduced plasma concentrations of darunavir, etravirine, and raltegravir. Clinical data are scarce (n=4), but therapeutic drug monitoring (TDM) evaluations have shown oxcarbazepine concentrations within the therapeutic range, with darunavir levels comparable to control values. Despite this potential drug–drug interaction, the regimen was maintained because of good tolerability and lack of therapeutic alternatives.

Remarkably, the patient’s HIV RNA remained suppressed over the years, suggesting that virological control was preserved despite the interaction risk.
Additional comedications included levetiracetam, diazepam, atorvastatin, enalapril, tamsulosin, and folic acid, reflecting a context of complex polypharmacy. This underscores the importance of evaluating pharmacokinetic interactions when combining antiretrovirals with antiepileptic drugs, as well as the need for individualized decision-making and close monitoring in patients with restricted ART options.
Real-world observations, such as this case of long-term coadministration of ART with oxcarbazepine without virological failure, provide some reassurance. Nonetheless, careful monitoring remains essential, together with patient engagement to reinforce adherence and awareness of potential interaction risks.

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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