clinical cases DDIs

Date of report 15 May 2025

Reported case interaction between **Bictegravir** and **Carbamazepine**

Drugs suspected to be involved in the DDI

Victim
Bictegravir

Daily Dose
50 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Feb. 12, 2023

End date
Ongoing

Perpetrator
Carbamazepine

Daily Dose
600 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Dec. 14, 2020

End date
Jan. 13, 2025

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

Carbamazepine, Atorvastatin

Clinical case description

Gender

Female

Age

48

eGFR (mL/min)

>60

Liver function impairment

No

Description

A 48-year-old woman was diagnosed with HIV in 2010 and has been on antiretroviral therapy (ART) since then. She has demonstrated good adherence to treatment, maintaining a suppressed viral load (<50 copies/mL) over the past ten years. Her medical history includes obesity (BMI 36 kg/m²) and dyslipidemia.

She was also diagnosed with bipolar disorder and has been treated with carbamazepine (600 mg/day) since 2022, achieving good mood stability with no significant episodes of depression or mania.

In February 2023, her ART regimen was switched to bictegravir/lamivudine/tenofovir alafenamide (B/F/TAF) as part of a treatment simplification strategy. Prior to this, she had been receiving doravirine plus emtricitabine/tenofovir alafenamide since December 2022, without any virological issues.

Despite having maintained an undetectable viral load for two years, in January 2025, her viral load rebounded to 335 copies/mL. Following this virological finding, carbamazepine was discontinued and replaced with lamotrigine, initiated at 25 mg/day and titrated up to 100 mg/day. In subsequent follow-up visits, the patient’s viral load remained suppressed (<30 copies/mL).
Carbamazepine is a potent inducer of several enzymes, including CYP3A4, UGT1A1, and the transporter P-glycoprotein (P-gp), which can significantly reduce the plasma concentrations of coadministered drugs such as bictegravir and tenofovir. In this case, prolonged coadministration of carbamazepine with B/F/TAF may have lowered bictegravir plasma levels, thereby compromising virological efficacy. Therefore, the combination of carbamazepine with B/F/TAF may jeopardize long-term viral suppression and is contraindicated by regulatory agencies and most treatment guidelines.

Clinical Outcome

Loss of efficacy

Drug Interaction Probability Scale (DIPS)

Score

4 - Possible

Editorial Comment

Coadministration of carbamazepine with B/F/TAF is not recommended, and alternative anticonvulsants should be considered. Carbamazepine is a known enzyme inducer and is expected to reduce exposure of both bictegravir and tenofovir, potentially leading to loss of therapeutic efficacy, as illustrated in this clinical case. In addition, obesity has been associated with reduced bictegravir exposure (Berton M et al. Clin Infect Dis 2024) which may have further contributed to decreased bictegravir levels in this patient.
Notably, some reports (Pallanza M, et al. Antivir Ther. 2025) suggest a dose/concentration-dependent induction effect by carbamazepine. This raises the possibility that low-dose carbamazepine could be coadministered with integrase inhibitors in select cases. However, such an approach requires careful clinical monitoring and is not currently recommended by treatment guidelines.

University of Liverpool Recommendation

- These drugs should not be coadministered

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