clinical cases DDIs

Date of report 20 Oct 2026

Reported case interaction between **Dolutegravir** and **Rifampin**

Drugs suspected to be involved in the DDI

Victim
Dolutegravir

Daily Dose
100 (mg)

Dose adjustment performed
Yes

Administration Route
Oral

Start date
Oct. 31, 2023

End date
Ongoing

Perpetrator
Rifampin

Daily Dose
600 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Oct. 31, 2023

End date
Ongoing

Complete list of drugs taken by the patient

Antiretroviral treatment

Emtricitabine/Tenofovir-AF
Dolutegravir

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

Rifampin 600 mg QD; Azitromycin 500 mg OD; Moxifloxacin 400 mg OD;
Clofazimine 100 mg OD; Prednisone 20 mg OD; Dapagliflozin 10 mg OD; Candesartan 4 mg twice daily; Atorvastatin 10 mg OD; Omeprazole 20 mg OD;
Trimethoprim/sulfamethoxazole 160/800 mg three times per week

Clinical case description

Gender

Female

Age

43

eGFR (mL/min)

60-30

Liver function impairment

No

Description

A 43-year-old woman was diagnosed with HIV in May 2022. At presentation, she was severely immunocompromised, with a nadir CD4+ T-cell count of 57 cells/µL. She was also diagnosed with kidney failure and nephrotic syndrome, with biopsies showing both thrombotic microangiopathy and focal segmental glomerulosclerosis. She started antiretroviral therapy (ART) with BIC/FTC/TAF.
In December 2022, she was diagnosed with disseminated non-tuberculous mycobacterial disease. Initial treatment with azithromycin plus ethambutol resulted in clinical

improvement, but ethambutol was discontinued after four months because of ocular toxicity. The disease subsequently worsened, and the causative mycobacterial species could not be identified despite repeated cultures. An empirical regimen comprising rifampicin, azithromycin, moxifloxacin and clofazimine was therefore initiated in October 2023.

At that time, her plasma HIV-1 RNA was <20 copies/mL, and ART was switched to dolutegravir (DTG) 50 mg twice daily plus emtricitabine/tenofovir alafenamide (FTC/TAF) 200/25 mg once daily. Tenofovir disoproxil fumarate was avoided because of her kidney disease. In February 2024, prednisone was added for immune reconstitution inflammatory syndrome (IRIS).

Despite improvement in the disseminated mycobacterial disease, the rifampicin-containing regimen has been continued because her CD4+ T-cell count remains below 200 cells/µL and inflammatory findings persist on PET-CT.

Throughout concomitant treatment with rifampicin and DTG 50 mg twice daily plus FTC/TAF, her plasma HIV-1 RNA has remained suppressed (<20 copies/mL).

Clinical Outcome

No unwanted outcome

Editorial Comment

Rifampicin reduces dolutegravir exposure through enzyme induction. Increasing dolutegravir to 50 mg twice daily compensates for this interaction and is recommended in patients without integrase inhibitor resistance. This dose

adjustment should be maintained for approximately two weeks after rifampicin discontinuation because the inducing effect may persist.
The interaction between rifampicin and tenofovir alafenamide (TAF) is less well established. Rifampicin induces P-gp and other transporters involved in TAF disposition, markedly reducing plasma TAF exposure and, to a lesser extent, intracellular tenofovir-diphosphate concentrations. However, pharmacokinetic studies have shown that intracellular tenofovir-diphosphate concentrations with TAF 25 mg once daily plus rifampicin remain substantially higher than those achieved with standard-dose tenofovir disoproxil fumarate (TDF). These findings suggest that TAF may retain antiviral activity despite rifampicin-mediated induction, although the available evidence remains limited.
In this patient, kidney disease limited the use of TDF. Sustained virological suppression during treatment with twice-daily dolutegravir plus FTC/TAF and rifampicin provides additional real-world evidence supporting the potential effectiveness of this approach in selected patients with limited alternatives. However, the contribution of TAF cannot be assessed independently from the other components of the regimen, and close virological monitoring remains important.

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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