clinical cases DDIs

Date of report 29 Apr 2025

Reported case interaction between **Cobicistat** and **Atorvastatin**

Drugs suspected to be involved in the DDI

Perpetrator
Cobicistat

Daily Dose
150 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Dec. 18, 2017

End date
Jan. 26, 2024

Victim
Atorvastatin

Daily Dose
80 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Feb. 23, 2022

End date
Ongoing

Complete list of drugs taken by the patient

Antiretroviral treatment

Darunavir/Cobicistat
Raltegravir

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

Ezetimibe/atorvastatin 10/80 mg; pioglitazone/metformin 15/850 mg; empaglifocin 10 mg; insulin lantus 40 UI; omeprazole 20 mg; AAS 100 mg; bisoprolol 2.5 mg; alprazolam 0.5 mg

Clinical case description

Gender

Male

Age

73

eGFR (mL/min)

60-30

Liver function impairment

No

Description

A cisgender man was diagnosed with HIV in 1993. Antiretroviral therapy (ART) was initiated in 1995 with AZT monotherapy. Due to lack of virological suppression, he underwent multiple ART regimens until 2004. A genotypic resistance test performed during that period revealed resistance-associated mutations (RAMs) in reverse transcriptase (RT): M41L, M184V, L210W, T215Y, and Y181I. Since 2004, he has maintained an undetectable plasma viral load on darunavir/cobicistat plus raltegravir.
He has no history of opportunistic infections but has developed several comorbidities over the course of follow-up:

- Hypertension

- Type 2 diabetes mellitus, treated with insulin and oral antidiabetic agents
- Dyslipidemia, managed with atorvastatin/ezetimibe, fenofibrate, and evolocumab
- ST-elevation myocardial infarction (STEMI) in 2016, Killip class I— currently asymptomatic
- Prostate cancer, diagnosed in 2020 and treated surgically
- Colon adenocarcinoma, diagnosed in late 2021, treated with subtotal colectomy and ileorectal anastomosis in October 2021

  Until February 2022, dyslipidemia was managed with ezetimibe 10 mg plus atorvastatin 40 mg. In an effort to optimize lipid control, the atorvastatin dose was increased to 80 mg QD.

  Although atorvastatin exposure is known to increase when co-administered with darunavir/cobicistat — due to CYP3A4, OATP1B1, and BCRP inhibition — the patient did not experience any adverse effects.

  Nevertheless, to minimize the risk of potential toxicity, his ART regimen was changed in January 2024 to bictegravir/emtricitabine/tenofovir alafenamide combined with doravirine.

Clinical Outcome

No unwanted outcome

Editorial Comment

This is an interesting case of a well-known interaction in which cobicistat can increase atorvastatin AUC by 290%. It is

recommended to initiate atorvastatin with the lowest dose, and titrate its dose while monitoring for safety (e.g., myopathy).
In this case a double dose of atorvastatin was administered for almost 2 years together with cobicistat and no side effect was reported; however, a daily dose of 40 mg atorvastatin should not be exceeded with careful safety monitoring (Note, the US product label for darunavir/cobicistat states not to exceed atorvastatin 20 mg/day).
Bictegravir/emtricitabine/tenofovir alafenamide and doravirine do not inhibit of induce of CYP3A4, OATP1B1 or BCRP, and their combination with atorvastatin is not associated with of clinically relevant drug-drug interactions.

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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