clinical cases DDIs

Date of report 13 May 2024

Reported case interaction between **Cobicistat** and **Red yeast rice (monacolin)**

Drugs suspected to be involved in the DDI

Perpetrator
Cobicistat

Daily Dose
150 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Nov. 23, 2016

End date
Ongoing

Victim
Red yeast rice (monacolin)

Daily Dose
Unknown

Dose adjustment performed
No

Administration Route
Oral

Start date

End date

July 12, 2023 March 15, 2024

Complete list of drugs taken by the patient

Antiretroviral treatment

Elvitegravir/Cobicistat/Emtricitabine/Tenofovir-AF

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

Red Yeast Rice; venlafaxine 75mg/d; lorazepam 1mg/d; calcidiferol 266mcg/month

Clinical case description

Gender

Female

Age

59

eGFR (mL/min)

>60

Liver function impairment

No

Description

A female individual with HIV, displaying good adherence and tolerance to several ART regimens, most recently EVG/c/FTC/TAF, which she desired to continue due to its good tolerance. She experiences depression, managed with venlafaxine, and osteopenia, treated with monthly calcifediol.
Upon a friend's recommendation, she began taking Red Yeast Rice due to its purported health benefits. Despite never experiencing any side effects, it was advised to discontinue this natural product. Red Yeast Rice shares chemical properties with lovastatin and may lead to serious adverse events due to PK enhancement of cobicistat. This underscores the importance of eliminating PK enhancers from ART regimens whenever possible, if not essential. Despite this

advice, the patient declined to switch to an unboosted ART regimen.

Clinical Outcome

No unwanted outcome

Editorial Comment

This is an interesting case involving a natural product (red yeast rice) and a boosted antiretroviral (elvitegravir/cobicistat). It highlights the caution required when using boosted antiretrovirals, as potential interactions due to enzymatic inhibition can lead to significant morbidity and mortality (e.g., interactions with ergotamine, lovastatin/simvastatin, and eplerenone, among others). Red yeast rice contains monacolin K, a natural component structurally similar to lovastatin and metabolized by CYP3A4. Elvitegravir/cobicistat could significantly increase monacolin K exposure due to CYP3A4 inhibition. While there are no reports with boosted antiretrovirals, two case reports of rhabdomyolysis resulting from interactions with red yeast rice (one with ciclosporin; one with sertraline and rosuvastatin) are reported. Therefore, red yeast rice should not be coadministered with boosted antiretrovirals. While this case did not result in clinical consequences, caution should be taken when using red yeast rice with boosted antiretrovirals as the outcome could depend on the dose of red yeast rice used and its concentration in the product. Lastly, this case highlights the importance of inquiring about over-the-counter medications

and herbal remedies at every visit, as patients often do not disclose such information.

University of Liverpool Recommendation

- These drugs should not be coadministered

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