clinical cases DDIs

Date of report 18 Dec 2023

Reported case interaction between **Cobicistat** and **Simvastatin**

Drugs suspected to be involved in the DDI

Perpetrator
Cobicistat

Daily Dose
150 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Unknown

End date
Unknown

Victim
Simvastatin

Daily Dose
Unknown

Dose adjustment performed
No

Administration Route
Oral

Start date
Unknown

End date
Unknown

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

Simvastatin

Clinical case description

Gender

Female

Age

60

eGFR (mL/min)

>60

Liver function impairment

No

Description

A 60-year-ol women was admitted to the hospital after 1 week of gradual onset of myalgias and upper and lower extremity weakness progressing to a bedbound state. She has been taking elvitegravir_cobicistat/emtricitabine/tenofovir alafenamide (EVGc/F/TAF) together with simvastatin for the past year. On admission, the lab showed elevated creatinine kinase at 14'078 U/L (reference <196 U/L), aldolase at 73 U/L (reference <8.1 U/L), and myoglobin at 5520 ng/mL (reference <65 ng/mL). She underwent a muscle biopsy that revealed scattered degenerating muscle fibers without evidence of inflammation. Simvastatin was stopped on admission and she was treated empirically with combined usage of methylprednisolone and immunoglobulin. Despite empiric treatment, the patient's strength did not improve and her CK continued to rise to 40'845 U/L. EVGc/F/TAF was discontinued on hospital day 5 and her CK began to

downtrend to 34'944 U/L on the next day. Twelve days after EVGc/F/TAF discontinuation, the CK decreased to a normal level of 132 U/L corresponding to improvement in muscle strength. At 2 month follow-up, her strength improved to near her baseline. Statin therapy was witheld and the patient was started on bictegravir/emtricitabine and tenofovir alafenamide. There were no other known triggers for her myopathy and laboratory testing did not reveal an infectious or inflammatory etiology. The myopathy is likely explained by the interaction between elvitegravir/c and simvastatin.
This case has been published in the Journal of Clinical Neuromuscular Disease 2022; 24: 75-79).

Clinical Outcome

Toxicity

Drug Interaction Probability Scale (DIPS)

Score

7 - Probable

Editorial Comment

Coadministration of simvastatin with potent CYP3A4 inhibitors, such as cobicistat, is contraindicated as it is expected to markedly increase simvastatin concentrations which may cause myopathy, including rhabdomyolysis (as in this clinical case).

University of Liverpool Recommendation

- These drugs should not be coadministered

For more information click here

Personal information from the specialist

Name
Catia

Surname
Marzolini

Institution
University Hospital of Basel
University of Liverpool

Country
CH