clinical cases DDIs

Date of report 11 Oct 2022

Reported case interaction between **Dolutegravir** and **Magnesium supplements**

Drugs suspected to be involved in the DDI

Victim
Dolutegravir

Daily Dose
50 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Unknown

End date
Ongoing

Perpetrator
Magnesium supplements

Daily Dose
400 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date

End date

Unknown

Unknown

Complete list of drugs taken by the patient

Antiretroviral treatment

Dolutegravir/Abacavir/Lamivudine

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

Magnesium citrate

Clinical case description

Gender

Male

Age

55

eGFR (mL/min)

>60

Liver function impairment

No

Description

This is a case of a male patient, 55 years old, Caucasian, with no liver and kidney impairment. He was HIV diagnosed in 2002 and since then he had a long history of different antiretroviral treatments. He has no reported comorbidities. No alcohol and cigarette consumption. Since 2018, his current antiretroviral treatment, is as follows: 600 mg abacavir, 50 mg dolutegravir, and 300 mg lamivudine. Since the introduction of the current treatment, he was undetectable. However, in 2019 his HIV RNA pVL was 110 copies/mL. He confirmed that he was adherent to the treatment and reported self-prescribed supplements intake, specifically magnesium citrate (400 mg, QD). TDM was performed using validated high-performance liquid chromatography (HPLC) assay and it showed dolutegravir

C_{trough} plasma concentration of 0.28 µg/mL. He was advised to stop magnesium citrate supplement and his HIV RNK pVL 3 months after was again undetectable.

Clinical Outcome

Loss of efficacy

Drug Interaction Probability Scale (DIPS)

Score

5 - Probable

Editorial Comment

An important reminder that the interaction between INSTIs and divalent cations can cause virologicl failure. Also underlines the need for a full medication history, including supplements.
The DTG trough level was 0.28 mg/L which is considerably lower than the averagwe trough level of 0.8-1.0 mg/L. Although there is uncertainty around the true minimum effective concentration for DTG, some experts refer to 0.32 mg/L based on studies with doses of DTG lower than 50mg. The observed value here is below that potential target.

University of Liverpool Recommendation

■ Potential interaction - may require close monitoring, alteration of drug dosage or timing of administration

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