clinical cases DDIs

Date of report 23 Dec 2020

Reported case interaction between **Bictegravir** and **Mineral supplements**

Drugs suspected to be involved in the DDI

Victim
Bictegravir

Daily Dose
50 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Unknown

End date
Unknown

Perpetrator
Mineral supplements

Daily Dose
300/540 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Unknown

End date
Unknown

Complete list of drugs taken by the patient

Antiretroviral treatment

Bictegravir/Emtricitabine/Tenofovir-AF

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

zinc 300 mg daily, calcium 540 mg daily, phosphorus 420 mg daily, atorvastatin 80 mg once daily, amlodipine 5 mg daily, benazepril 40 mg daily, fenofibrate 160 mg daily, dulaglutide 0.75 mg weekly, linagliptin 5 mg daily, metformin 1000 mg twice daily, insulin.

Clinical case description

Gender

Male

Age

42

eGFR (mL/min)

>60

Liver function impairment

No

Description

42-year-old HIV infected male with diabetes, hypertension, hyperlipidemia who consulted a naturalist for diabetic foot complications. The naturalist prescribed zinc tablets (the tablets contained also calcium) and a zinc solution. The patient was instructed to take three tablets every 3 h while awake. The patient reported taking 12 tablets/day for a daily dose of 300 mg zinc and 540 mg calcium. The patient did also take zinc solution every 3 hours. The patient who was virologically suppressed became detectable (VL: 56'477 copies/mL). The zinc and calcium supplements were stopped and the patient was maintained on bictegravir/emtricitabine and tenofovir alafenamide. The VL returned to < 40 copies/mL and has remained undetectable since. Zinc and calcium are

divalent cations which can form a complex with bictegravir at the level of the gastrointestinal tract thereby impairing the absorption of bictegravir. This case has been published by Rock AE et al. Infect Dis Ther 2020.

Clinical Outcome

Loss of efficacy

Drug Interaction Probability Scale (DIPS)

Score

5 - Probable

Editorial Comment

Bictegravir binds to divalent cations, such as zinc or calcium, and forms a complex at the level of the gastro-intestinal tract which results in less bictegravir being absorbed. Biktarvy should not be co-administered simultaneously with divalent cations under fasted conditions. Biktarvy should be administered at least 2 hours before, or with food 2 hours after antacids containing magnesium and/or aluminium. Biktarvy should be administered at least 2 hours before iron supplements, or taken together with food.

University of Liverpool Recommendation

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

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