clinical cases DDIs

Date of report 16 Jul 2024

Reported case interaction between **Dolutegravir** and **Garlic**

Drugs suspected to be involved in the DDI

Victim
Dolutegravir

Daily Dose
50 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Oct. 1, 2021

End date
Ongoing

Perpetrator
Garlic

Daily Dose
Unknown

Dose adjustment performed
No

Administration Route
Oral

Start date
Jan. 5, 2022

End date
April 1, 2023

Complete list of drugs taken by the patient

Antiretroviral treatment

Dolutegravir
Lamivudine

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

Garlic (tablets)

Clinical case description

Gender

Female

Age

41

eGFR (mL/min)

>60

Liver function impairment

No

Description

A 41-year-old female was diagnosed with HIV in September 2021. Upon diagnosis, her baseline viral load was 470,000 copies/mL, and her CD4 T-cell count was 205 cells/mL. She had no opportunistic infections or comorbidities. She initiated a two-drug regimen with dolutegravir/lamivudine QD with good adherence and tolerance. At the first laboratory follow-up after one month, her HIV viral load was 241 copies/mL. Subsequent follow-ups at three and six months revealed viral loads of 93 and 97 copies/mL, respectively. Despite a significant reduction in viral load compared to baseline, virological suppression had not been achieved. Upon further inquiry, the patient reported good adherence to antiretroviral therapy and denied concomitant medications. However, upon directed questioning regarding the consumption of over-the-counter medications or herbal supplements, she admitted to

daily ingestion of garlic tablets for the past three months as a supplement to boost her immune system. Suspecting a potential drug interaction (garlic is a potential intestinal CYP3A4 and/or P-gp inducer), the patient was advised to discontinue garlic intake. One month later, a follow-up viral load indicated a result of <20 copies/mL, and she has consistently maintained viral suppression since then.

Clinical Outcome

Loss of efficacy

Drug Interaction Probability Scale (DIPS)

Score

5 - Probable

Editorial Comment

Garlic has been shown to induce intestinal CYP3A4 and/or P-gp. Garlic supplements decreased unboosted saquinavir AUC by 50% in a clinical trial, and there is a case report of treatment failure due to garlic cloves (six garlic cloves three times weekly) decreasing ritonavir-boosted atazanavir trough concentrations by ~70%. Similarly, concentrations of dolutegravir could be decreased via the induction of CYP3A4 and/or P-gp. Patients should be advised against the use of garlic supplements.

This clinical case highlights a point of great interest: proactively asking patients about the use of herbal products or dietary supplements.

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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