clinical cases DDIs

Date of report 21 Jun 2021

Reported case interaction between **Efavirenz** and **Hypericum perforatum**

Drugs suspected to be involved in the DDI

Victim
Efavirenz

Daily Dose
600 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Unknown

End date
Unknown

Perpetrator
Hypericum perforatum

Daily Dose
900 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date

End date

Unknown

Unknown

Complete list of drugs taken by the patient

Antiretroviral treatment

Efavirenz
Abacavir/Lamivudine

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

St john's wort (Hypericum perforatum)

Clinical case description

Gender

Female

Age

37

eGFR (mL/min)

>60

Liver function impairment

No

Description

37 years old HIV+, female, Caucasian, BMI 34,4 kg/m2. HIV-1 infection was diagnosed in 2010 and ART was initiated in 2016: efavirenz (600 mg QD)+ fixed-dose combination of two NRTIs: abacavir (ABC, 600 mg) and lamivudine (3TC,300 mg), achieving undetectable HIV-1 RNA and CD4+ T-cells count above 600 cells/mm3. In October 2019 she presented with low level viremia (HIV-1 RNA 190 copies/mL). She referred good adherence to ART. TDM was performed and the efavirenz plasma Ctrough was 1082,12 ng/mL. Then, patient was referred that she had been taking St john's wort (300 mg 3 times daily, hyperforin content of the St John's wort formulation was 2.8%), during the last couples of months. The physician indicated to withdraw this herbal supplement and 3 months later plasma HIV-1 RNA was undetectable.

Clinical Outcome

Loss of efficacy

Drug Interaction Probability Scale (DIPS)

Score

6 - Probable

Editorial Comment

Efavirenz is a substrate of P450 cytochrome and P-gp, and plasma levels may decrease when potent of P450 cytochrome

or P-gp inducers are used concomitantly. St John's wort (Hypericum perforatum) may induce both P450 cytochrome and P-gp and therefore decrease efavirenz plasma concentrations. Subsequently, subtherapeutic levels of efavirenz may cause virological failure. For this reason, the use of St John's wort is not recommended in people living with HIV treated with efavirenz, especially those formulation containing high doses of hyperforin (more than 1 mg per day). Although the efavirenz plasma concentration was in the lower limit of the therapeutic range in this case (probably mid-dose interval) , it reflects the potential risk of virologic failure when efavirenz and St. John’s wort are combined. Products with high hyperforin content should be avoided in people living with HIV treated with efavirenz and the use of products with not more than 1 mg hyperforin per day is recommended to minimize the risk of interactions. References Chrubasik-Hausmann S, Vlachojannis J, McLachlan AJ. Understanding drug interactions with St John's wort (Hypericum perforatum L.): impact of hyperforin content. J Pharm Pharmacol. 2019 Jan;71(1):129-138.

University of Liverpool Recommendation

- These drugs should not be coadministered

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