clinical cases DDIs

Date of report 16 Jul 2024

Reported case interaction between **Efavirenz** and **Risperidone**

Drugs suspected to be involved in the DDI

Perpetrator
Efavirenz

Daily Dose
600 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Unknown

End date
Ongoing

Victim
Risperidone

Daily Dose
4.5 (mg)

Dose adjustment performed
Yes

Administration Route
Oral

Start date
May 12, 2020

End date
Ongoing

Complete list of drugs taken by the patient

Antiretroviral treatment

Efavirenz/Emtricitabine/Tenofovir-DF

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

Risperidone

Clinical case description

Gender

Female

Age

27

eGFR (mL/min)

>60

Liver function impairment

No

Description

A 27-year-old female with perinatally transmitted HIV had been on antiretroviral therapy (ART) with FTC/TDF/EFV for over 10 years. Her latest laboratory results showed an undetectable HIV viral load and a CD4 T cell count of 588 cells/mL. She was also under psychiatric follow-up for moderate mental retardation and impulsive behaviors. For this reason, treatment with risperidone 3 mg orally daily was initiated in 2020. In 2021, the risperidone dose had to be increased to 4.5 mg daily due to episodes of dysthymia, with a good clinical response up to the present.
Potential drug interactions between these medications were reviewed. This included the potential decrease in risperidone concentrations due to CYP3A4 induction by EFV and the potential risk of QT interval prolongation. Concerning these interactions, the patient initially showed a lack of response to risperidone, prompting an increase in dosage above the

recommended dosage in the label (3 mg/day) to control dysthymic episodes. On the other hand, no cardiac events were reported throughout this period. An ECG was performed and showed a normal QT interval value.

Clinical Outcome

Loss of efficacy

Drug Interaction Probability Scale (DIPS)

Score

5 - Probable

Editorial Comment

The use of risperidone to treat behavior disorders in patients with intellectual disability is an off-label indication. In two randomized placebo-controlled studies, the mean dose of risperidone was 1.45 mg/day (range, 1 to 4 mg/day) in one [Gagiano C, et al. Psychopharmacology (Berl) 2005; 179(3): 629-636], and the other initially used 2 mg twice daily, with increases of 4 mg/day weekly up to a maximum total dose of 12 mg/day [Vanden Borre R, et al. Acta Psychiatr Scand 1993; 87:167-171].
Although in this case it is difficult to confirm whether the risperidone dose needed to be increased due to patient characteristics or the presence of efavirenz, from a pharmacokinetic perspective it is plausible that the dose of risperidone had to be increased due to efavirenz's inducing

effect. Risperidone is a major substrate of CYP2D6, CYP3A4, and P-glycoprotein, while efavirenz is a moderate inducer of CYP3A4.

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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