clinical cases DDIs

Date of report 08 May 2019

Reported case interaction between **Efavirenz** and **Ticagrelor**

Drugs suspected to be involved in the DDI

Perpetrator
Efavirenz

Daily Dose
600 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Jan. 1, 2012

End date
Dec. 1, 2014

Victim
Ticagrelor

Daily Dose
180 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Nov. 1, 2014

End date
Dec. 1, 2014

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

Aspirin, ticagrelor, enalapril, bisoprolol, atorvastatin and pantoprazole

Clinical case description

Gender

Male

Age

39

eGFR (mL/min)

>60

Liver function impairment

No

Description

39-year-old male, current smoker, with HIV infection diagnosed since 2012. After HIV diagnosis, he started cART with tenofovir/emtricitabine/efavirenz, achieving optimal immune and virological control. In November 2014, the patient was admitted to hospital due to chest pain. The ECG showed signs compatible with an acute inferior myocardial infarction, and coronary angiography revealed occlusion of the right coronary artery. A conventional stent was inserted, and the patient started therapy with aspirin, ticagrelor, enalapril, bisoprolol, atorvastatin and pantoprazole. One week later, the patient returned to the hospital with a new episode of chest pain, and an ECG showed findings suggestive of recurrent acute inferior coronary syndrome. A new coronary angiography revealed the presence of thrombosis in the recently inserted stent. Thromboaspiration

and implantation of a drug-eluting stent were performed. At discharge, ticagrelor was replaced by prasugrel, and efavirenz was replaced by raltegravir. After two years, no recurrence of coronary events had been detected in this patient.

Clinical Outcome

Loss of efficacy

Drug Interaction Probability Scale (DIPS)

Score

6 - Probable

Editorial Comment

Ticagrelor is metabolized mainly by the isoenzyme CYP3A4 of the cytochrome P450. Teng R et al. reported a decrease of 86% in ticagrelor exposure when it was given with rifampin. Similarly, CYP3A4 induction by efavirenz might have contributed to the recurrence of the acute coronary syndrome in this patient. (Teng R, Mitchell P, Butler K. Effect of rifampicin on the pharmacokinetics and pharmacodynamics of ticagrelor in healthy subjects. Eur J Clin Pharmacol 2013; 69 (4): 877-883.)

University of Liverpool Recommendation

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

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