clinical cases DDIs

Date of report 14 Feb 2020

Reported case interaction between **Ritonavir** and **Fluticasone**

Drugs suspected to be involved in the DDI

Perpetrator
Ritonavir

Daily Dose
200 (mg)

Dose adjustment performed
No

Administration Route
Oral

Start date
Jan. 1, 2010

End date
Ongoing

Victim
Fluticasone

Daily Dose
500 (mcg)

Dose adjustment performed
No

Administration Route
Inhaled

Start date
Jan. 1, 2008

End date
Unknown

Complete list of drugs taken by the patient

Antiretroviral treatment

Lopinavir/ritonavir
Lamivudine
Abacavir

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

Fluticasone, salbutamol

Clinical case description

Gender

Male

Age

48

eGFR (mL/min)

>60

Liver function impairment

No

Description

A 48-year-old man presented to the HIV clinic for a routine check-up. Antiretroviral treatment with lamivudine plus abacavir and lopinavir/ritonavir. The patient also took 200 µg of inhaled salbutamol as required and 100 µg of inhaled beclomethasone twice a day for his bronchial asthma. In 2008, the beclomethasone was substituted for 250 µg of inhaled fluticasone propionate twice a day. The patient reported a two-month history of weight loss, generalised weakness and fatigue. His vital signs were normal apart from low blood pressure (90/60 mmHg). His examination results were unremarkable, with no signs of Cushing’s syndrome or lipodystrophy. At baseline, his morning serum cortisol levels were 7 nmol/L (normal range: 200–550 nmol/L) on two occasions and his plasma adrenocorticotropic hormone

(ACTH) level was 5.4 pg/mL (normal range: 7–50 pg/mL). One hour after administrating 250 µg of synthetic ACTH, his cortisol level increased to 71 nmol/L. A diagnosis of secondary adrenal insufficiency was made. The administration of inhaled fluticasone propionate was immediately halted and the patient was instead prescribed 20 mg of oral hydrocortisone in two divided doses per day. Within four weeks, symptoms of weakness and fatigue had dramatically improved; moreover, the asthma symptoms did not worsen and the patient continued using 200 µg of inhaled salbutamol as required. Following the fluticasone withdrawal, basal cortisol levels were 136 nmol/L and 317 nmol/L at 8 and 11 months, respectively. His ACTH level was 43.1 pg/mL at 11 months. After a period of one year, the hydrocortisone dose was tapered successfully over a three-month period. This case was publised in Sultan Qaboos Univ Med J. 2017 Aug;17(3):e339-e342. doi: 10.18295/squmj.2017.17.03.014. By Al-Maqbali A et al.

Clinical Outcome

Toxicity

Drug Interaction Probability Scale (DIPS)

Score

7 - Probable

Editorial Comment

Concomitant use of lopinavir/ritonavir and glucocorticoids metabolised by CYP3A4 is not recommended unless the potential benefit of treatment outweighs the risk of systemic corticosteroid effects, including Cushing's syndrome and adrenal suppression. Systemic corticosteroid effects have been reported in patients receiving ritonavir and inhaled or intranasally administered fluticasone propionate. A dose reduction of the glucocorticoid should be considered with close monitoring of local and systemic effects or a switch to a glucocorticoid, which is not a substrate for CYP3A4 (e.g. beclometasone). Moreover, in case of withdrawal of glucocorticoids progressive dose reduction may have to be performed over a longer period.

University of Liverpool Recommendation

- These drugs should not be coadministered

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