clinical cases DDIs

Date of report 16 Apr 2024

Reported case interaction between **Rilpivirine** and **Rifampin**

Drugs suspected to be involved in the DDI

Victim
Rilpivirine

Daily Dose
900 (mg)

Dose adjustment performed
No

Administration Route
Intramuscular

Start date
Unknown

End date
Unknown

Perpetrator
Rifampin

Daily Dose
Unknown

Dose adjustment performed
No

Administration Route
Intravenous

Start date
Unknown

End date
Unknown

Complete list of drugs taken by the patient

Antiretroviral treatment

Rilpivirine

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

Other ARV: cabotegravir long acting, zidovudine iv
Rifampicin, amikacin, moxifloxacin, linezolid, posaconazole

Clinical case description

Gender

Male

Age

49

eGFR (mL/min)

Hemodialysis

Liver function impairment

No

Description

A 49-year-old Sudanese male presented with several weeks of progressive encephalopathy and was found in septic shock with multi-organ failure, including respiratory failure requiring mechanical ventilation and acute renal insufficiency requiring continous renal replacement therapy. He was diagnosed with advanced HIV (HIV RNA 470 000 copies/mL; CD4 13 cells/mm3; CD4% 15.1%), TB and fungal endophthalmitis. He had also severe bowel dysmotility requiring a parenteral regimen for all treatments. The patient was started on IV TB treatment including rifampicin, amikacin, moxifloxacin and linezolid in addition to liposomal amphotericin for his disseminated histoplasmosis and fungal endophthalmitis. The amphotericin was transitioned to posaconazole due to pancytopenia. Despite the bowel dysmotility, an oral antiretroviral treatment was tried via nasogastric tube. However this resulted in

intolerability therefore IM cabotegravir (600 mg) and rilpivirine (900 mg) plus IV 1 mg/kg zidovudine administered every 4 hours were initiated. Plasma cabotegravir and rilpivirine were measured 7 days post injection. The cabotegravir concentration was 455 ng/mL and therefore below the minimal concentration target (664 ng/mL) whereas rilpivirine was below the limit of quantification. The patient died 48 days after initial presentation due to multi-organ failure. This case shows that the coadministration with strong inducers leads to sub-therapeutic levels of injectable cabotegravir and rilpivirine and therefore should be avoided. This case was published by Sunagawa SW et al. in Open Forum Infect Dis 2023.

Clinical Outcome

Loss of efficacy

Drug Interaction Probability Scale (DIPS)

Score

7 - Probable

Editorial Comment

This is an extremely complex case where, given the patient's conditions, an off-label indication of drugs is used.
This case underscores that coadministration with strong inducers leads to sub-therapeutic levels of injectable cabotegravir and rilpivirine and therefore should be avoided.

It also highlights that if potent inducers such as rifampicin are going to be used, it is essential to monitor drug levels (in this case rilpivirine and cabotegravir) when there are no previous studies supporting the concomitant use or the dose adjustment necessary to counterbalance the inducing action of rifampicin.

University of Liverpool Recommendation

- These drugs should not be coadministered

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