Treatment Selector

Antiretrovirals and Recreational Drugs

UNIVERSITY OF LIVERPOOL

TherEx Centre for Experimental Therapeutics

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	ATV/c	ATV/r	DRV/c	DRV/r	LPV/r	DOR	EFV	ETV	NVP	RPV oral	FTR	LEN	MVC	BIC/ F/TAF	CAB oral	CAB/ RPV	DTG	EVG/c/ F/TAF	EVG/c/ F/TDF	RAL	FTC/ TAF	FTC/ TDF
Stimulants																						
Cocaine	↑a♥	↑a♥	↑a	↑a	↑a♥	↔	↑b♥	↑b	↑b	↔♥	↔♥	↑a	↔	↔	↔	↔♥	↔	↑a	↑a	↔	↔	↔
Ecstasy (MDMA)	↑c	↑c	↑c	↑c	↑c	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑c	↑c	↔	↔	↔
Mephedrone	↑d	↑d	↑d	↑d	↑d	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑d	↑d	↔	↔	↔
Methylone	↑e	↑e	↑e	↑e	↑e	↔	↑↓e	↑e	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑e	↑e	↔	↔	↔
Methamphetamine	↑	↑	↑	↑	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Monkey dust	↑f	↑f	↑f	↑f	↑f	↔	↑↓f	↑f	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑f	↑f	↔	↔	↔
Poppers (Amyl nitrate)	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Depressants																						
Alcohol	↔	↔	↔	↔	↔g	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Alprazolam	↑	↑h	↑	↑h	↑h	↔	↓	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Codeine	↑i	↑i	↑i	↑i	↑i	↔	↓i	↓i	↓i	↔	↔	↑	↔	↔	↔	↔	↔	↑i	↑i	↔	↔	↔
Diazepam	↑	↑	↑	↑	↑	↔	↓	↑	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
GHB (gamma hydroxybutyrate)	↔	↑j	↔	↑j	↑j	↔	↔	↔	↔	↔	↔	↑j	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Heroin (Diamorphine)	↔k	↓k	↔k	↓k	↓k	↔	↑	↔k	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔k	↔k	↔	↔	↔
Hydrocodone	↑	↑	↑	↑	↑	↔	↓♥	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Hydromorphone	↔	↓	↔	↓	↓	↔	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ketamine	↑	↑	↑	↑	↑	↔	↓	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Methadone	↔♥	↔♥	↑	↓16%	↓53% ♥	↓5% ⇓26%	↓52%♥	↑6%	↓~50%	↓16%♥	↑14%♥	↑	↔	↔	↔	↓♥	↓2%	↑7%	↑7%	↔	↔	↔
Midazolam (oral)	↑l	↑l	↑l	↑l	↑l	↓18%	↓m	↓	↓	↔	↔	↑308%	↔	↔	↑10%	↔	↔	↑l	↑l	↔	↔	↔
Morphine	↔n	↓n	↔n	↓n	↓n	↔	↑	↔n	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔n	↔n	↔	↔	↔
Nitazenes	↑	↑	↑	↑	↑	⇑	↔	↔	↔	⇑	↔	↑	⇑	⇑	↔	⇑	↔	↑	↑	↔	↔	↔
Oxycodone	↑	↑	↑	↑	↑160%	↔	↓	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Pethidine (Meperidine)	↑	↓o	↑	↓o	↓o	↔	↓o	↓o	↓o	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Temazepam	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Triazolam	↑l	↑l	↑l	↑l	↑l	↔	↓m	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑l	↑l	↔	↔	↔
Hallucinogens																						
Cannabis	↑p⇓	↓q⇓	↑p	↑↓q	↑↓q	↔	↑p	↑p	↔	↔	↔	↑p	↔	↔	↔	↔	↔	↓q	↓q	↔	↔	↔
LSD (Lysergic acid diethylamide)	↑r	↑r	↑r	↑r	↑r	↔	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↑r	↑r	↔	↔	↔
Phencyclidine (PCP, angel dust)	↑s	↑s	↑s	↑s	↑s	↔	↓	↓	↓	↔	↔	↑s	↔	↔	↔	↔	↔	↑s	↑s	↔	↔	↔

Interactions with CAB/RPV long acting injections

Pharmacokinetic interactions shown are mostly with RPV.
QT interactions shown are with RPV.

Interactions with Lenacapavir

Residual LEN may affect exposure of sensitive CYP3A4 substrates initiated within 9 months after stopping subcutaneous LEN.

Interactions with Ibalizumab

None

Interactions with Abacavir (ABC), Lamivudine (3TC), Tenofovir-DF (TDF) or Zidovudine (ZDV)

ABC: Methadone concentrations may be decreased with abacavir. Clinical monitoring should be considered as methadone maintenance therapy may need to be adjusted in some patients.

3TC: No clinically relevant interactions expected.

TDF: No clinically relevant interactions expected.

ZDV: Methadone may increase zidovudine exposure.
Clinical monitoring for potential zidovudine toxicity may be required.

Colour Legend

- No clinically significant interaction expected.
- These drugs should not be coadministered.
- Potential interaction which may require a dose adjustment or close monitoring.
- Potential interaction predicted to be of weak intensity. No *a priori* dosage adjustment is recommended.

Text Legend

↑ Potential increased exposure of the recreational drug
↓ Potential decreased exposure of the recreational drug
↔ No significant effect

⇑ Potential increased exposure of HIV drug
⇓ Potential decreased exposure of HIV drug

♥ One or both drugs may cause QT and/or PR prolongation.
ECG monitoring is advised if coadministered with atazanavir or lopinavir.
Rilpivirine and fostemsavir were shown to prolong the QT interval at supratherapeutic doses. Caution is advised with rilpivirine. ECG monitoring is advised with fostemsavir and drugs with a known QT prolongation risk.

♡ Efavirenz has a potential risk of QT prolongation relating specifically to homozygous carriers of CYP2B6*6/*6.

Numbers refer to increase or decrease in AUC as observed in drug-drug interaction studies.

Notes

a Clinical relevance unknown as cocaine is metabolized by other non-CYP mediated pathways. Ensure patient is aware of signs/symptoms of cocaine toxicity.
b Concentrations of hepatotoxic metabolite increased.
c Ensure patient is aware of signs/symptoms of ecstasy toxicity.
d Ensure patient is aware of signs/symptoms of mephedrone toxicity.
e Ensure patient is aware of signs/symptoms of methylone toxicity.
f Ensure patient is aware of signs/symptoms of monkey dust toxicity.
g Not recommended with oral solution due to large amount of propylene glycol in the solution which may compete with alcohol elimination.
h Initial inhibitory effect followed by induction in presence of ritonavir.
i Potential opiate withdrawal due to reduced conversion to morphine.
j Ensure patient is aware of signs/symptoms of GHB toxicity.
k Heroin is rapidly deacetylated to 6-monoacetylmorphine (6-MAM) by plasma esterases and subsequently to morphine by liver esterases. 6-MAM enters the brain at a much faster rate than morphine and has been correlated to the acute effects of heroin. PIs/EFV are unlikely to alter 6-MAM concentrations but may alter morphine concentrations. Also, PIs, ETV, EVG/c could increase the amount of morphine entering the brain (via P-gp inhibition) and thus potentiate the effects of opiate in the CNS.
l Increased sedation or respiratory depression.
m The efavirenz European SPC (but no longer the US Prescribing Information) contraindicates coadministration citing competition for CYP3A4 by efavirenz as a potential mechanism for inhibition of midazolam or triazolam metabolism which may result in potential serious and/or life-threatening adverse events.
n Amount of morphine entering the CNS may be increased due to inhibition of P-gp and thus potentiate the effects of opiate in the CNS.
o Concentrations of neurotoxic metabolite increased.
p Concentrations of tetrahydrocannabinol (THC, the psychoactive component of cannabis) could be increased.
q PK effect refers to concentrations of tetrahydrocannabinol (THC), the psychoactive component of cannabis).
r Ensure patient is aware of signs/symptoms of LSD toxicity.
s Ensure patient is aware of signs/symptoms of PCP toxicity.

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Abbreviations ATV atazanavir, DRV darunavir, LPV lopinavir, /c cobicistat, /r ritonavir, DOR doravirine, EFV efavirenz, ETV etravirine, NVP nevirapine, RPV rilpivirine, FTR fostemsavir, LEN lenacapavir, MVC maraviroc, BIC bictegravir, CAB cabotegravir, DTG dolutegravir, EVG elvitegravir, RAL raltegravir, F or FTC emtricitabine, TAF tenofovir alafenamide, TDF tenofovir-DF