

Do ART and chemsex drugs get along? Potential drug-drug interactions in a cohort of people living with HIV engaged in chemsex: an observational study

L. DE LA MORA ¹, M.J. NEBOT ², E. DE LAZZARI ¹, M. TUSET ³, M. LAGUNO ¹, A. UGARTE ¹, A. INCIARTE ¹, B. TORRES ¹, A. GONZÁLEZ-CORDÓN ¹, J. AMBROSIONI ¹, E. MARTINEZ ¹, J.L. BLANCO ¹, D. SHORT ⁴, J. MALLOLAS ¹, M. MARTINEZ-REBOLLAR ¹

¹Hospital Clinic of Barcelona, Infectious Diseases, Barcelona, Spain, ²Hospital Universitario Ramón y Cajal, Madrid, Spain, ³Hospital Clinic of Barcelona, Pharmacology, Barcelona, Spain, ⁴ViiV Healthcare, Brentford, United Kingdom

EPB190

Background: HIV infection has evolved into a chronic condition requiring life-long antiretroviral treatment (ART), exposing people living with HIV (PLWH) to potential drug-drug interactions (pDDIs) with co-administered substances. Chemsex users prescribed with ART are at risk of pDDIs due to intake of recreational drugs. This study aims to characterize potential ART and chemsex drugs pDDIs and evaluate their association with unscheduled relevant medical and psychiatric hospital consultations and admissions.

Methods: Single-centre, retrospective, observational study of pDDIs between ART and recreational drugs in a series of gay, bisexual and other men who have sex with men (gbMSM) PLWH who practice chemsex attending a tertiary hospital from February 2018 through August 2019. In order to study associations between all recorded pDDIs and relevant clinical events detected in unscheduled medical visits, we estimated the incidence rate (IR) per 100 persons-year of those events and compared it between patients with green (absence of pDDI) and orange-flag (moderate severity pDDI) or red-flag (high severity pDDI) using the Incidence Rate Ratio (IRR).

Results: A total of PLWH engaged in chemsex were included, as summarized on **table 1**. ART regimens were prescribed: 44% based on integrase inhibitors, 30% on boosted-ART, and 26% based on non-nucleoside reverse transcriptase inhibitors. The most frequently substances and recreational drugs used were erectile dysfunction agents (83%), methamphetamine (79%), GHB (77%) and alkyl nitrites (71%). Polydrug use was reported in 52%. We observed 2048 pDDIs. Of these, 23% were orange-flag pDDIs; 88% related to boosted ARTs. The IR of the 285 unscheduled relevant episodes in patients with orange-flag pDDIs was 64.67 (95% CI, 40.07–89.28). The IRR of green flag pDDIs was 1.05 (95% CI, 0.60–1.8; p = 0.876).

Figure 1 illustrates the percentage of flags by ART and **figure 2** the distribution of ARTs, *chems* and DDIs.

Demographic characteristics		Mean (SD)
Age (years)		39 (9)
Region of origin (N=171)	Spain	56 (33%)
	Europe (w/o Spain)	29 (17%)
	Latin America	82 (48%)
	Australia/Oceania	1 (1%)
	Asia	1 (1%)
	Africa	2 (1%)
Clinical characteristics		Median (IQR)
CD4 (N=171)		677 (523 ; 854)
CD8 (N=170)		811 (617 ; 1010)
CD4/CD8 (N=170)		0.8 (0.6 ; 1.1)
Plasma HIV RNA-VL	Detectable	24 (14%)
	Undetectable ¹	147 (86%)
Plasma HIV RNA-VL (copies/ml) (N=24)		4950 (109 ; 88750)
ART characteristics		n (%)
ART (N=249) ²		
InSTI/b or PI/b		75 (30%)
InSTI		109 (44%)
NNRTI		65 (26%)

SD, standard deviation. IQR, interquartile range. VL, viral load. InSTI/b, Integrase Strand Transfer Inhibitors boosted with cobicistat/ritonavir. PI/b, Protease Inhibitors boosted with cobicistat/ritonavir. InSTI, Integrase Strand Transfer Inhibitors. NNRTI, non-nucleoside reverse transcriptase inhibitors.

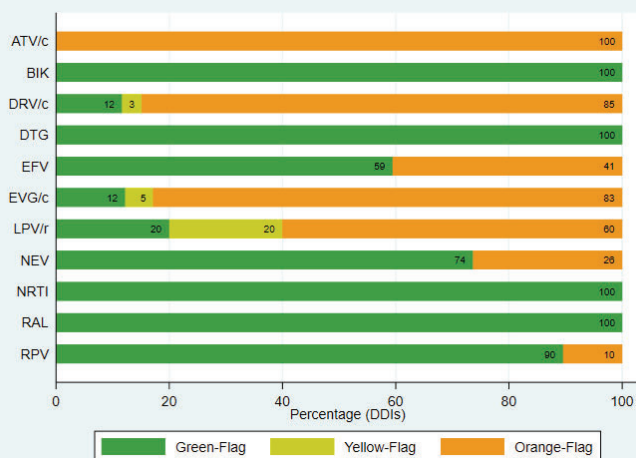
¹ Undetectable VL: <50copies/ml. ² 249 treatment regimens (in 172 patients), one year before and one year after the baseline visit.

	n (%)
Chemsex-drugs	
Cocaine (N=172)	96 (56%)
Ketamine (N=172)	74 (43%)
GHB/GBL (N=172)	132 (77%)
Methamphetamine (N=172)	136 (79%)
Mephedrone (N=172)	85 (49%)
Speed (N=172)	60 (35%)
Ecstasy (N=172)	76 (44%)
MDMA (N=172)	62 (36%)
Alkyl nitrites (poppers) (N=172)	122 (71%)
Erectile dysfunction agents (N=172)	143 (83%)
Cannabis (N=172)	51 (30%)
Number of drugs used (before or during chemsex)	
1 drug (N=167)	16 (9%)
2 drugs (N=167)	65 (38%)
Polydrug use* (N=167)	88 (52%)
Route of drug administration	
Oral (N=170)	128 (75%)
Inhaled (N=171)	135 (79%)
Sniffed (N=172)	113 (66%)
Sublingual (N=171)	18 (11%)
Rectal (N=172)	29 (17%)
Intravenous (slamming) (N=170)	26 (15%)
Frequency of use	
Every day (N=167)	11 (7%)
Every week (N=169)	76 (45%)
Every month (N=168)	65 (39%)
< 1 time per month (N=165)	29 (18%)

*Active use of three or more drugs before or during chemsex

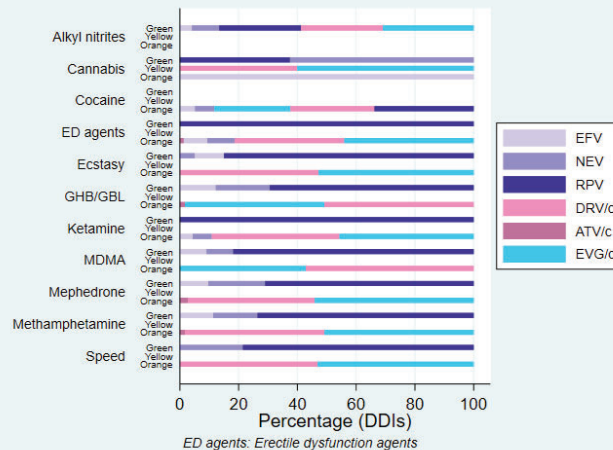
GHB, γ-hydroxybutyric acid. GBL, γ-butyrolactone. Ecstasy, includes "designer drugs". MDMA, 3,4-methylenedioxymethamphetamine. Erectile dysfunction agents include Sildenafil, Tadalafil, Vardenafil

Figure 1. Percentage of flags by ART.



Potential DDIs between ART and *chems* are represented with different colours according to the severity of potential DDIs: orange flag (potential clinical relevance), yellow flag (weak clinical relevance) and green flag (absence of potential DDIs).

Figure 2. Distribution of ARTs, *chems* and DDIs



Chemsex-drugs are displayed on the ordinate axis. They are subdivided in bars corresponding to green, yellow and orange flags. These bars are illustrated by colours, representing the proportion of ART corresponding to each flag. On every bar appearing from left to right, the proportion of flags is ranged from lowest to highest. Lilac colours represent NNRTI, rose colours belong to boosted PI and turquoise to boosted InSTI.

Conclusions: One in four pDDIs are of moderate severity predominantly related to boosted ARTs. However, no significant increase in the incidence of unscheduled relevant consultations has been found under these pDDIs. We observed a high number of unscheduled consultations, predominantly for psychiatric events and intoxication. Beyond using non-boosted ART to minimize pDDIs, other factors related to the practice of chemsex must be addressed, in order to offer a better approach.

This content was acquired following an unsolicited medical information enquiry by a healthcare professional. Always consult the product information for your country, before prescribing a ViiV medicine. ViiV does not recommend the use of our medicines outside the terms of their licence. In some cases, the scientific Information requested and downloaded may relate to the use of our medicine(s) outside of their license.