Prevalence of Potential Drug-Drug interactions involving Antiretroviral Drugs in Buenos Aires, Argentina

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Background

Antiretroviral agents (ARVs) have a high potential for drug interactions. Although the prevalence and risk factors for clinically significant drug-drug interactions (CSDDIs) have been well described, data are lacking for Latin American countries. Moreover, impact of CSDDIs on virologic outcome remains unclear.

The aim of our work was to evaluate the prevalence and risk factors for CSDDIs at two HIV outpatient care sites: a Public Hospital and a private HIV Clinic in Buenos Aires, Argentina.

Methods

- Descriptive cross-sectional study (September to November 2012).
- HIV-1 infected patients under antiretroviral treatment (ART) at the time of the study were randomly asessed for concomitant medication. CSDDIs were screened using the University of Liverpool Drug Interactions Program (www.hiv-druginteractions.org) for NNRTIs, PIs and NRTIs.
- Demographic characteristics, immunological and viral parameters, co-infection with HBV and HCV and ART regimen were collected.
- Logistic regression was used to investigate risk factors for CSDDIs in patients with concomitant medication.

Classification of CSDDIs

Red flag interactions

These drugs should not be co-administered as they may lead to serious adverse events as a result of increase in plasma drug concentration or to a dramatic decrease in plasma concentration of the ARV.

Orange flag interactions

Potential interaction that may require close monitoring, alteration of dosage or timing of clinical consequences.

Green flag interactions

No known interactions.

Results

A total of 217 patients were included. Male sex: 64% (CI95: 57-70). Median Age (IQR): 41 (36-48). Median of years since HIV diagnosis (IQR): 6 (2-12). Previous or concomitant AIDS defining illness: 32%.

Presence of comorbidities: 19%. HBV and HCV co-infection: 7% and 15%, respectively. Antiretroviral regimen: NNRTI-based: 48%, PI-based: 50% and NNRTI plus PI: 2%. Median of CD4 T-cell count (IQR): 402 cells/mL (235-588). Viral load <50 copies/mL: 78%.

Overall, 138 (64%) (CI95: 57-70) of the patients had >= 1 co-medication (median 2 per patient). The most frequent co-medications observed were anti-infective (40%), cardiovascular (25%), gastrointestinal agents (22%), vitamins (22%) and central nervous system agents (CNS) (21%). Of the patients with co-medication, 68 (49%) had at least one CSDDI (n=97; median 1 per patient). Of these, 67 (49%) and 3 (2%) patients had an orange and red flag interactions respectively (figure 2 and table 1).

Two patients (14.5%) had a CSDDI between ARVs: unboosted atazanavir + tenofovir and ritonavir boosted atazanavir + efavirenz (both orange flag).

Twenty patients (14.5%) had CSDDIs that could potentially reduce plasma ARV drug levels, however, no association was found with virologic failure (table 2).

In the multivariate analysis the number of co-medications and use of CNS agents were associated with the presence of CSDDIs (table 3).

Conclusions

- Co-medications and CSDDIs were common in our setting, without compromising virologic success.
- Red flag interactions were rarely observed.
- In this context, training of HIV physicians in drug interactions is of major importance for adequate management of these patients.