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Thesis title: “Drug users living with HIV/AIDS: Survival analysis and treatment adherence

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ABSTRACT

Since the advent of highly active antiretroviral therapy (HAART), widening disparities in AIDS-related morbidity and mortality have been observed, particularly among disadvantaged or marginalized populations, like drug users living with HIV/AIDS (DU HIV+).

Trying to contribute with this problem, initially we conducted a systematic review about adherence to HAART among HIV+ DU. Higher HAART adherence was found in patients receiving multidisciplinary care, particularly those being treated in structured settings (e.g. directly observed therapy) and/or in services providing on the same setting HIV and drug addiction treatment.

Secondly, we conducted a meta-analysis of the same studies included in our systematic review. Studies were highly heterogeneous ($I^2 \geq 75\%$): evaluation of adherence using distinct assessment methods (self-report, pharmacy records, MEMS-caps), different cut-offs to define optimal adherence (75-100%), and different study design (cross-sectional studies, randomized controlled trials and Nonrandomized longitudinal Design). Forty-one studies were considered, which analyzed 15194 patients (11628 HIV+ DU, 76.5%). Overall adherence was 60.3% (95% CI: 52.9-67.4%). Study design, particularly related to recall period and adherence measurement method, were independent predictors of inter-study heterogeneity. Among a sub-sample of studies evaluating clinical factors associated with HAART, better treatment outcomes were found among adherent patients, those under abstinence (i.e., former DU), those with less severe psychiatric conditions, and receiving psychosocial support.

And finally we conducted a survival analysis of HIV-positive injecting drug users (IDU), diagnosed between 2000-2006, using different Brazilian national databanks. Among 28,426 patients with complete data (43% IDU; 57% MSM), 6,777 (23.8%) died during 87,792 person-years of follow-up. At baseline, compared to MSM, IDU were significantly less likely to be receiving HAART (24.3% vs. 31.2%; $p < 0.001$), to have ever conducted a CD4 count exam (44.1% vs. 56.9%; $p < 0.001$) or HIV-1 RNA viral load determination (54.2% vs. 62.5%; $p < 0.001$). After controlling for frailty effects, AIDS-related mortality remained higher in IDU than in MSM (AHR: 1.94; 95% CI: 1.84 - 2.05)

Survival analysis results emphasize that substantial inequalities in HAART access still remain in Brazil, despite the country universal and free access to HAART, one of the most comprehensive AIDS program in developing countries. Those inequalities may explain higher mortality among HIV-infected IDUs, compared to MSM in Brazil. Renewed efforts to reduce these health disparities are clearly needed

Findings from the systematic review and meta-analysis suggest that HIV-positive DU can achieve satisfactory levels of HAART adherence, particularly those who have access to multidisciplinary services, adequate to the frequent co-morbidities found within this population. Available evidence suggest that HIV+ DU tend to be inappropriately assumed to be less adherent and unlikely to achieve desirable treatment outcomes, when compared to their non-DU cohort, highlighting the need to expand access to HAART treatment for this population.

Keywords: HIV, AIDS, drug use, systematic review, meta-analysis, survival analysis, HAART