

The effect of amphetamine-type stimulant use at start of treatment on substance use, health, and treatment retention during treatment among clients enrolled in an opioid agonist program.

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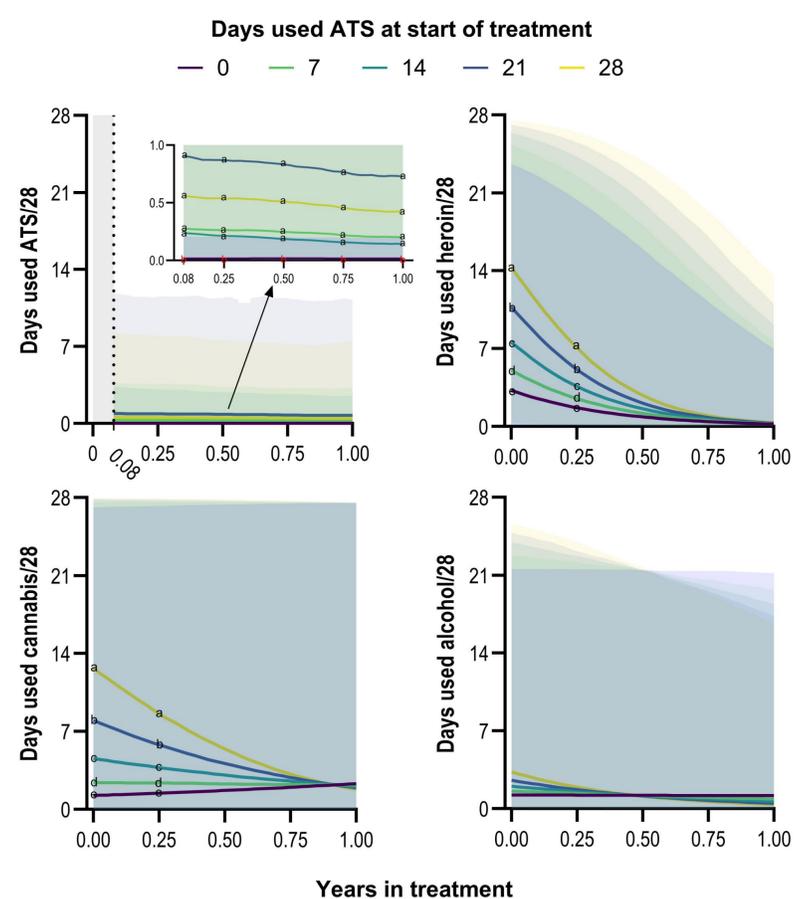
Introduction

Evidence from secondary analyses of clinical trials suggests that for people in opioid agonist treatment (OAT) amphetamine-type stimulant (ATS) use is associated with poorer treatment retention, increased use of ATS and non-prescribed opioids, and greater hazard of relapse. These trials typically examine single-datapoint outcomes – e.g. total opioid- or ATS-negative urines, total days in treatment, total days to relapse – which fail to capture the *trajectory* of substance use over the course of treatment. Using routinely-collected data from public clinics, our study aimed to track the influence of ATS use at start of treatment on seven clinical outcomes – ATS, heroin, cannabis, and alcohol use, and psychological health, physical health, and quality of life.

Methods

- Data came from Australian Treatment Outcomes Profiles (ATOP) collected from people who enrolled in OAT in six LHDs in New South Wales, Australia between July 1st 2016 and June 30th 2019, with follow-up data collected until June 30th 2021. To be included data had to come from treatment encounters with at least two ATOP observations, valid start and end of treatment dates, and all seven outcomes measured.
- 556 treatment encounters were used, from 536 clients, comprising 1778 individual ATOPs.
- Substance use was quantified as number of days used in the 28 days prior to each measurement. Psychological Health, Physical Health, and Quality of life in the previous 28 days, were measured on a 0-10 scale, with higher scores indicating better health.
- Bayesian linear hierarchical multivariate regressions were used to estimate differences in outcomes over time for five different levels of ATS use at baseline: 0, 7, 14, 21, and 28 days used. Betabinomial regressions were used for heroin, cannabis and alcohol use outcomes and ordinal for Psychological Health, Physical Health, and Quality of Life. ATS use was modeled via linear univariate hierarchical regression as start-of-treatment observations had to be removed (i.e. because ATS use at start of treatment was the predictor).
- Bayesian Cox proportional hazard regressions were used to estimate the effect of ATS use at start of treatment on risk of dropout.

Figure 1. Substance use in first year of treatment

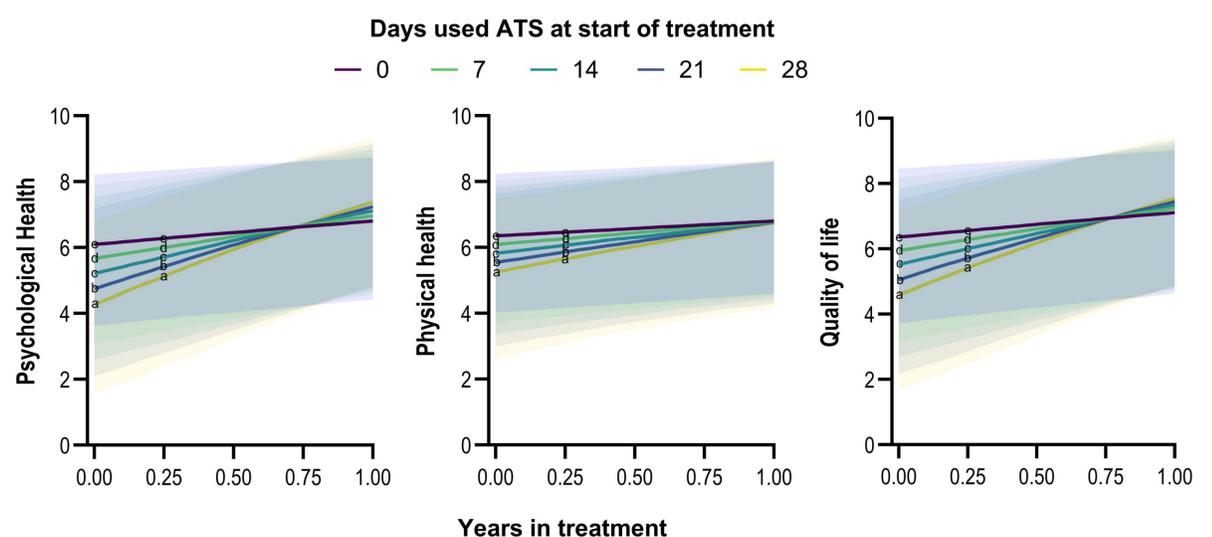


Note: Differing letters indicate notably different estimated frequency of substance use at the timepoint in question for the group in question. The second ATOP could only occur 28 days/0.08 years from start of treatment. Because ATS model had baseline observations removed, estimates start at 0.08 years.

Results

- ATS use at start of treatment was associated with more frequent heroin and cannabis use and poorer Psychological Health, Physical Health and Quality of Life, both at start of and three months (0.25 years) into OAT treatment. No differences associated with ATS use at start of treatment were estimated at 6, 9, or 12 months.
- ATS use at start of treatment was associated with greater ATS use throughout the first year of treatment (see top right panel Figure 1), however the differences in estimated days used per month were very small.
- ATS use was not associated with any notable differences in alcohol use at any point during the first year of treatment.
- ATS use was associated with greater hazard of dropout (HR: 1.025, 95% CI: 1.004, 1.044)

Figure 2. Health and wellbeing in first year of treatment



Note: Differing letters indicate notably different estimated frequency of substance use at the timepoint in question for the group in question

Discussion: Among people in OAT, ATS use at start of treatment was associated with greater use of heroin and cannabis, and poorer treatment retention, health and wellbeing. However, there is no evidence that the differences associated with ATS use at start of treatment persist beyond three months. Caution should be exercised when interpreting these findings as the absence of differences may reflect the sparser data at later timepoints rather than indicating the absence of differences. Our approach has great potential for using routinely collected data to answer clinical research questions. More data over a longer timeframe will improve the accuracy of these estimates.