

Lisdexamfetamine for the treatment of acute methamphetamine withdrawal: A pilot safety and feasibility trial

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Introduction and Aims: There are no evidence-based treatments for methamphetamine (MA) withdrawal. This study aimed to assess the safety and feasibility of a 5-day, tapering dose regimen of lisdexamfetamine dimesilate (LDX) for the treatment of acute MA withdrawal.

Design and Methods: A single-arm, single-site, open-label pilot study. Participants were admitted to an inpatient withdrawal unit, and received a five-day tapering dose of LDX: 250mg LDX on Day 1, reducing by 50mg per day to 50mg on Day 5. All participants received standard inpatient withdrawal care. Participants were followed-up weekly for three weeks. Primary endpoint was safety at Day 5 (adverse events [AEs] and vital signs), and feasibility (recruitment time and screen failure rates).

Results: Ten participants enrolled (9 male [90%], median age 37 [IQR 32-42] years). Eight (80%) participants were retained to the primary endpoint and received all study medication doses, two (20%) self-discharged (unrelated to the study). No treatment-related serious adverse event (SAE) occurred. One unrelated SAE was reported (shigellosis). Of 46 AEs reported, 17 (37%) were potentially causally related, all mild (17/17). All vital statistics were within expected limits. Thirty-nine potential participants were pre-screened for the trial, ten progressed to screening. One participant was enrolled every 12.6 days.

Discussions and Conclusions: This is the first trial of LDX for the treatment of MA withdrawal. We implemented a tapering regimen commencing at doses significantly higher than used for other indications. In our sample LDX was feasible and safe, with an AE profile consistent with the product label.

Implications for Translational Research: Evidence from this trial will inform the future development of multi-site randomised controlled trials which will be leveraged to grow national and international clinical research networks. These data add to a growing body of research examining the treatment of methamphetamine dependence or withdrawal with psychostimulant medication.

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