WASHINGTON STATE UNIVERSITY
Elson S. Floyd College of Medicine

PROGRAM OF EXCELLENCE IN ADDICTIONS RESEARCH

APPL Analytics & PsychoPharmacology Laboratory

Cocaine Craving and Use Outcomes in a Randomized Study to Test the Safety and Effectiveness of Buprenorphine and Naltrexone for the Treatment of Cocaine Dependence

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Background

- Cocaine craving is a core symptom of cocaine use disorder (CUD) and remains a consistent obstacle to achieving sustained reductions in use and relapse prevention.
- A systematic review examining pharmacological treatments for cocaine craving reported that in their review of 130 clinical trials, there was an association between craving and multiple cocaine use outcomes in most studies, including both self-report and biochemical evidence of use (i.e., urinary benzoylecgonine).
- Some studies have examined relationships between craving and treatment efficacy with opioid agonists and shown more mixed results.

Aims

- To examine the relationship between self-reported cocaine craving over time (i.e., 100mm Visual Analog Scale) and cocaine use over time (measured via urine drug screen and self-report) in a sample of patients receiving medication treatment for cocaine use disorder.

Methods

- We conducted a secondary data analysis (CTN-0148) of a previously reported National Drug Abuse Treatment Clinical Trials Network clinical trial, *A randomized study to test the safety and effectiveness of buprenorphine in the presence of naltrexone for the treatment of cocaine dependence* (CTN-0048).
- This is a double-blind, placebo-controlled study (n=302); participants were assigned to one of three conditions of buprenorphine (placebo, 4mg/day, 16mg/day) and extended released naltrexone for 8 weeks, with 3 visits per week. Cognitive behavioral therapy was provided weekly.
- Random effects modeling was used to analyze the relationship between craving and 1) urine drug screen for cocaine use, and 2) self-reported cocaine use, while also modeling the potential effect of treatment and time.

Results

- Results from the urine drug screen model found that there was a significant relationship between cocaine craving and urine drug screens for cocaine use (OR=0.98, $p<0.01$), such that lower cocaine craving was associated with higher percentages of negative urine drug screens, while holding treatment assignment constant.
- Results from the self-reported use model found that there was a significant impact of time on self-reported cocaine use, and when examining the time by craving interaction (B=0.0008, $p<0.01$), such that lower cocaine craving was associated with higher percentages of negative self-reported cocaine use, while holding treatment assignment constant.

Conclusions

- Low craving is significantly associated with decreased cocaine use over time while receiving placebo or buprenorphine and extended-release naltrexone.
- This therapeutic may represent a promising treatment to build on for the medical treatment for cocaine use disorder.

Interaction between cocaine craving and UDS negative samples over time

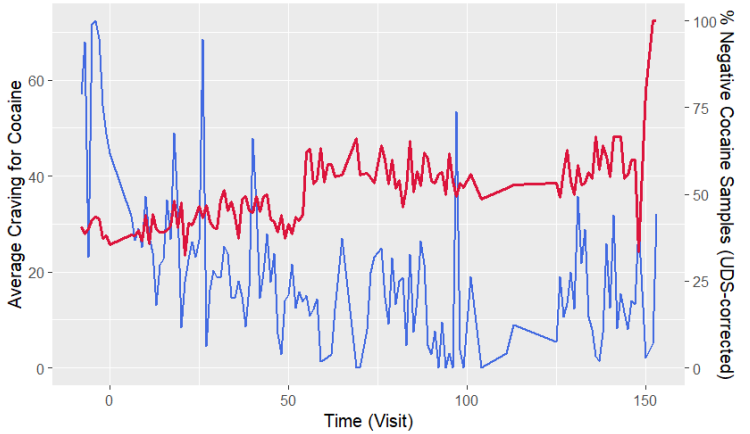

Table 1. Generalized linear mixed model results for self-reported (both UDS corrected and uncorrelated) cocaine use.

	UDS-Corrected Self-Reported Cocaine use				Self-Reported Cocaine use (No UDS Correction)			
	Beta	*SE*	*Z-value*	*P-value*	*Beta*	*SE*	*Z-value*	*P-value*
Time	-0.03*	0.01	-3.49	0.01	-0.02*	0.01	-3.01	0.01
Craving	0.01	0.01	1.08	0.28	0.01	0.01	1.42	0.16
Treatment [BUP 4mg]	-0.48	0.58	-0.82	0.41	-0.46	0.56	-0.81	0.42
Treatment [BUP 16mg]	-0.10	0.57	-0.18	0.86	-0.17	0.55	-0.32	0.75
Time x Craving	0.01*	0.01	3.84	0.01	0.01*	0.01	3.54	0.01

*$p<0.05$

National Institute on Drug Abuse

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