

IS THERE A RELATIONSHIP BETWEEN COGNITION AND RESIDUAL BLOOD LEVELS OF CANNABIS METABOLITES IN NON-INTOXICATED HEAVY CANNABIS CONSUMERS?

Bruno, R¹., ARC-D The Agonist Replacement for Cannabis Dependence Study Group, Bhardwaj, A^{2,3}., Kevin, R⁴., McGregor, I⁴., Lintzeris, N^{2,3}.

¹ School of Medicine (Psychology), University of Tasmania, TAS, AUSTRALIA

² Drug and Alcohol Services, South East Sydney Local Health District, NSW, AUSTRALIA

³ Division Addiction Medicine, Faculty Medicine and Health, NSW, AUSTRALIA

⁴ Lambert Initiative Cannabinoid Therapeutics, University Sydney, NSW, AUSTRALIA

Presenter's email: Raimondo.Bruno@utas.edu.au

Introduction and Aims: Cognitive impairments immediately after consumption of cannabis are well documented, in both naïve and chronic consumers. Cannabis is increasingly becoming licitly accessible in medical and recreational contexts. Cannabis metabolites are detectable long after subjective psychoactivity of the drug have passed. The increased licit access to cannabis products produces challenges to detection of drugged driving as cannabinoids may be detectable when impairment is not present. We aimed to determine whether there was any relationship between cognitive performance and plasma levels of cannabis metabolites in non-intoxicated heavy cannabis consumers.

Design and Methods: 116 adults (25% female) with heavy cannabis consumption (mean use 26 past 28 days) entering a treatment study. Participants were assessed on a cognitive test battery that has demonstrated sensitivity to acute intoxication and had concurrent blood levels of THC, OH-THC and THC-COOH assessed. Participants were not acutely intoxicated at assessment (50% had <8ng/mL THC in plasma, mean 12 ng/mL) but all had detectable levels of THC-COOH (mean 165ng/mL).

Results: Plasma levels of cannabis metabolites were robustly unrelated to any cognitive domain (processing speed, attention, sustained attention, inhibitory control, working memory and learning), with less than 1% shared variation between cannabinoid and cognitive performance. Bayesian analyses demonstrated good evidence for the null hypothesis of no relationship (Bayes Factors >3).

Conclusions: This study demonstrates that when not acutely intoxicated, there is no relationship between residual blood levels of cannabis metabolites and cognitive performance. This carries implications for roadside drug screening, particularly in chronic cannabis consumers in medical contexts.

Disclosure of Interest Statement: Nil