

P01-54

COMPUTER-ASSISTED SELF-INFUSION OF ETHANOL (CASE): NEW OUTCOME MEASURES MAY CONTAIN USEFUL INFORMATION

I. Mick¹, S. O'Connor², V. Vitvitsky², M.H. Plawecki³, K.F. Mann³, U.S. Zimmermann¹

¹Technische Universität Dresden, Dresden, Germany, ²Indiana University School of Medicine, Indianapolis, USA, ³Central Institute of Mental Health, Mannheim, Germany

Oral alcohol self-administration studies limit the range of arterial blood alcohol concentrations (aBAC) due to the combination of IRB-constraints on the maximum aBAC allowed and substantial variability in idiosyncratic enteral absorption. 25 healthy young adults participated in a preliminary assessment of the influence of familial alcoholism on alcohol self-administration using CASE. CASE automates the i.v. infusion of 6% ethanol, using an individualized kinetic model to achieve identical incremental aBAC in all subjects. In two CASE sessions, the subject was instructed to request infused "drinks" in order to emulate his/her perceptions of alcohol effects obtained at a weekend party. Conventional outcome measures all correlated closely with each other, so we evaluated the basic shape of the time course of aBAC achieved and the latency to peak aBAC (Tpk).

Tpk correlated with maximum aBAC on the 1st ($p=0.029$), but not 2nd session. Further, Tpk did not correlate with mean aBAC on either day, but did correlate well with the number of drink requests on both days ($p<0.001$). In 33 out of 47 experiments, subjects achieved and maintained stable plateaus of aBAC for at least 30 minutes during the self-infusion. Both latency to peak aBAC and the shape of the subject's preferred time course of aBAC may represent informative new ways of examining styles of alcohol self-administration of alcohol using CASE. The additions may enrich studies of the influence of factors such as familial alcoholism on the vulnerability for alcohol future alcohol dependence.