

## POSTER 28

### **BINGE DRINKING CAUSES SLEEP DISRUPTIONS: A LIKELIHOOD OF HANGOVER**

Kevin Bradshaw (MU Undergraduate)

Rishi Sharma (Postdoctoral fellow)

(Mahesh Thakkar, PhD)

University of Missouri Department of Neurology  
Harry S Truman Memorial Veterans' Hospital

Binge drinking is highly prevalent in the society especially among college students. It is often followed by a period of “hangover” which is defined as general discomfort consisting of heterogeneous behavioral and psychological symptoms following excessive use of alcohol. Hangover is often associated with accidents, poor work performance and adverse socioeconomic consequences. Although sleepiness is a symptom of hangover, experimental evidence describing sleeping is lacking. In this study, we performed binge drinking in rats and analyzed sleep-wake behavior.

**Methods:** Adult male Sprague-Dawley rats were anesthetized and surgically implanted with sleep recording electrodes. After post-operative recovery and habituation with the recording set up, a 24 hr baseline sleep-wake recording was performed on day 1. On second day, alcohol binge drinking was performed by intragastric administration of ethanol (35% v/v; ~14g/kg) in three divided doses (every 8 hr) based on the animal’s intoxication behavior. On third day, sleep recording was performed for 24 hr starting from 10 hr after the last dose of ethanol. Data was analyzed and expressed as percentage change in wakefulness, non-rapid eye movement (NREM or slow wave sleep) and rapid eye movement (REM) sleep.

**Results:** The animals spent a significantly more time in sleep as less time in wakefulness and more time in sleep during the active/dark (normal wake period of rats), 22 hr of the last dose of ethanol, as compared to baseline (N=6).

**Conclusions:** Our results suggest that increased sleep during the active period is an important contributing factor to the hangover following binge ethanol drinking.