Edith Collins Centre

Translational Research
Alcohol · Drugs · Toxicology

Comparative Effects of Topiramate and Naltrexone on Neural Activity During Anticipatory Anxiety in Individuals with Alcohol Use Disorder

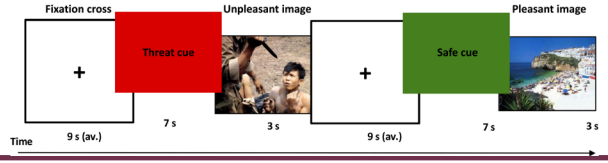
Gezelle Dali, Warren Logge, Henry Kranzler, Tristan Hurzeler, Hugh Gallagher, Paul S. Haber, & Kirsten Morley

INTRODUCTION

- Topiramate is an anticonvulsant that has shown utility in reducing alcohol use and craving in alcohol use disorder (AUD)
- Topiramate has also been shown to reduce anxiety in AUD
- This study compared topiramate to standard care pharmacotherapy (naltrexone) on fMRI reactivity to anticipatory anxiety
- Expected topiramate to show significantly different brain activation in networks implicated in anxiety and fear conditioning relative to naltrexone

METHODS

- 23 participants received topiramate (up to 200mg/day) and 19 received naltrexone (50mg/day) for 12 weeks
- Scanning session occurred 6-8 weeks from first dose
- Anticipatory task completed in scanner which presented a series of threat and safe cues followed by a negative and positive image, respectively



RESULTS

- No significant differences between topiramate and naltrexone groups
- Across both groups, three clusters showed significantly different activation in response to threat cues compared to safe cues (Fig 2)
- Greater reduction in anxiety from baseline to week 6 associated with reduced response to threat cues in cuneus and lingual gyrus (Fig 3)

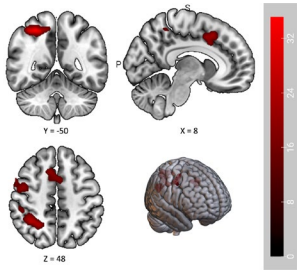


Fig 2. *Clusters demonstrating significantly different activation to threat versus safe cues.*

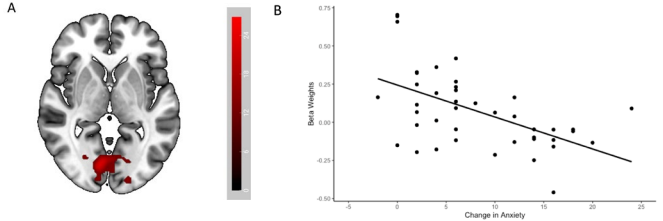


Fig 3. A. *Cluster of activation (L and R cuneus and lingual gyrus) for interaction between cue contrast and change in anxiety from baseline to week 6.* ***B.*** *Scatterplot of beta weights for threat vs safe contrast against change in anxiety from baseline to week 6 (positive scores indicate reduction in anxiety).*