UCLA

Effects of Ibudilast on Central and Peripheral Markers of Inflammation in Alcohol Use Disorder

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Introduction

- Ibudilast, a neuroimmune modulator, shows promise as a pharmacotherapy for AUD.
- The neuroimmune system has been implicated in the development and maintenance of AUD .
- *In vivo* and *in vitro* administration of ibudilast reduces pro-inflammatory cytokines.
- Ibudilast's effects on peripheral and central markers of inflammation in humans are unknown.

Study Aims

1. Examine the effect of ibudilast on central markers of inflammation (Choline, *Myo*-Inositol, and Creatine).
2. Examine the effect of ibudilast on peripheral markers of inflammation (C-reactive protein (CRP), IL-6, IL-8, IL-10, interferon gamma (IFN-γ), TNF-α, and the TNF-α/IL-10 ratio).
3. Explore the predictive relationship of markers of neuroinflammation and subsequent drinking in the trial.

Acknowledgements

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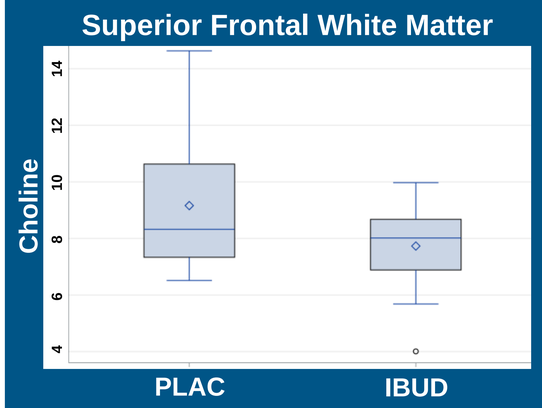
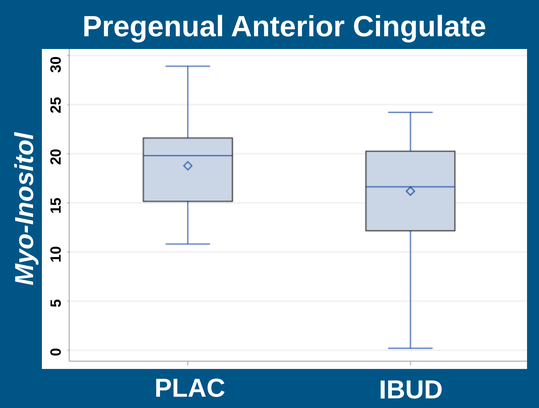
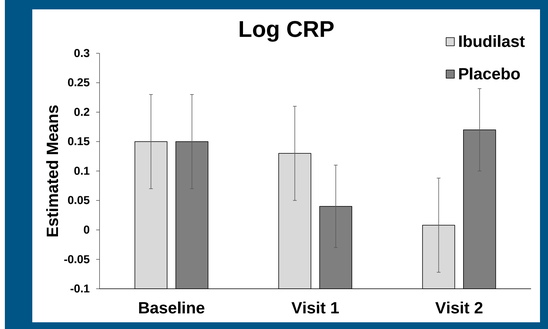
Treatment with Ibudilast Reduces Inflammatory Responses in People with Alcohol Use Disorder

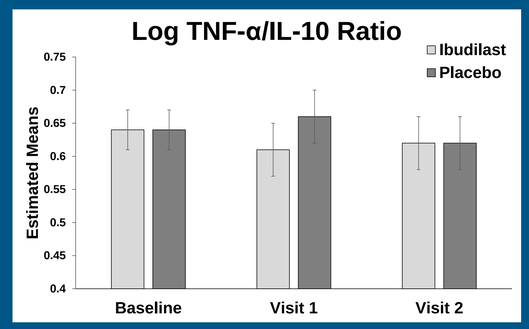
Central Markers of Inflammation



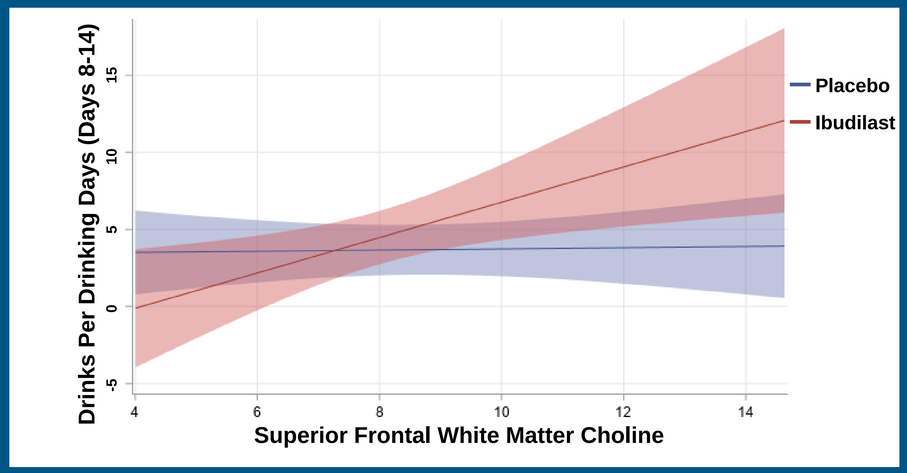


Peripheral Markers of Inflammation



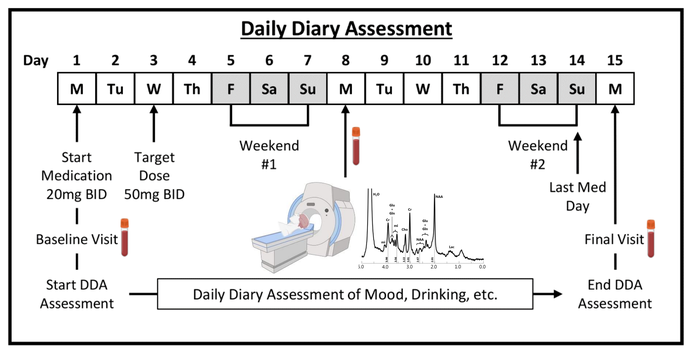


Clinical Prediction



Methods

- Non-treatment-seeking individuals with an AUD (n=52) were randomized to receive oral ibudilast (n=24) or placebo (n=28) for two-weeks.
- Plasma levels of peripheral inflammatory markers were measured at baseline, and after 1 and 2 weeks of medication.
- At study mid-point, proton magnetic resonance spectroscopy (MRS) was performed to measure neurometabolite markers of inflammation in frontal and cingulate cortices.
- Daily diary assessments were used to measure past-day drinking.



Discussion

- Participants treated with ibudilast had significantly lower levels of markers of inflammation in the SFWM and nominally lower levels in the pACC, relative to placebo-treated participants
- Ibudilast-treated participants had lower CRP levels and TNF-α/IL-10 ratios, albeit at trend level, relative to placebo.
- Exploratory analyses found that Cho levels in the SFWM were predictive of subsequent drinking in the ibudilast group.
- Together, these preliminary results suggest that ibudilast may work through a neuroimmune modulation mechanism to reduce drinking in individuals with AUD.