

Differential Trajectories of Depressive Symptom Response to IV Ketamine - Examining Sleep, Core Emotional and Atypical Symptoms Changes in a Large, Real World Sample of Depressed Adults

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BACKGROUND

- In previous work our group identified and replicated three distinct trajectories of antidepressant response to intravenous (IV) ketamine.
- Previous studies have demonstrated specific clinical components of depression with differential response to medicines.
- **AIM: to better understand IV ketamine's specific or general impact on depressive symptomatology over the course of acute treatment**

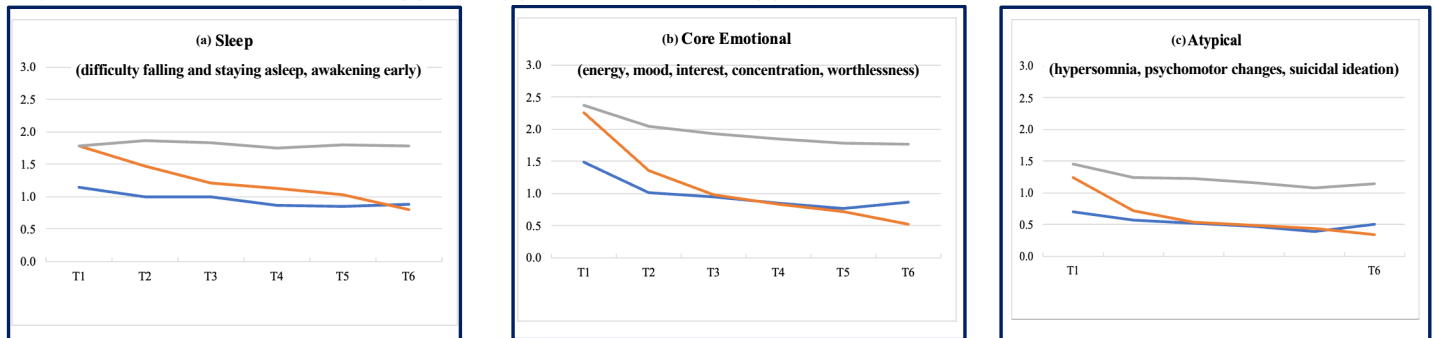
METHODS

- Patients (n=344), 50% male received 6 IV ketamine infusions twice weekly at a community-based clinic.
- Patients completed the Quick Inventory of Depressive Symptomatology –Self Report (QIDS-SR) before each infusion
- We constructed scores of sleep, core emotional, and atypical symptoms (Chekroud et al. 2017)
- Longitudinal clustering analysis identified patient subgroups, each with specific joint trajectories of those depressive symptoms during IV ketamine treatment. Non-parametric unsupervised machine learning techniques determined optimal number of classes and class membership.

We found three classes of patients sharing similar joint trajectories of depressive symptoms:

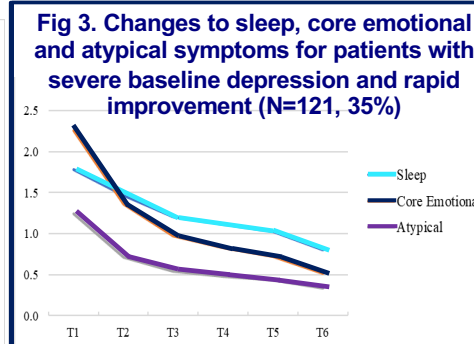
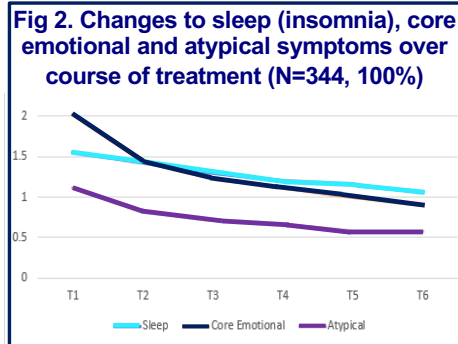
- a class with **Severe baseline Depression and Modest Improvement (SM; n = 101; 36%)**
- a class with **Severe baseline Depression and Rapid Improvement (SR; n = 121; 35%)**
- a class with **Moderate baseline Depression and Gradual Improvement (MG; n = 122; 29%)**

Fig 1. Three distinct trajectories of (a) sleep (b) core emotional and (c) atypical symptoms



Over 1/3 of patients demonstrated rapid and robust improvements to sleep, core emotional & atypical symptoms

**Patients improved more in core emotional symptoms compared to sleep and atypical symptoms
Patients showed greatest improvement in core emotional symptoms following the first infusion**



CONCLUSION

- We identified 3 similar trajectories of antidepressant response using a nonparametric statistical method to address the heterogeneity of depressive symptoms
- Future research should examine whether endophenotypes and biological markers of depression may be associated with response to IV ketamine treatment to optimize treatment planning