


1-2020

## Neurostimulants to Improve Consciousness in Acute Comatose Patients

Lyena Birkenstock

*Thomas Jefferson University, lyena.birkenstock@jefferson.edu*

Mohammed Kananeh

*Thomas Jefferson University, mohammed.kananeh@jefferson.edu*Follow this and additional works at: [https://jdc.jefferson.edu/si\\_ctr\\_2022\\_phase1](https://jdc.jefferson.edu/si_ctr_2022_phase1) Part of the [Neurology Commons](#), and the [Translational Medical Research Commons](#)[Let us know how access to this document benefits you](#)

### Recommended Citation

Birkenstock, Lyena and Kananeh, Mohammed, "Neurostimulants to Improve Consciousness in Acute Comatose Patients" (2020). *Phase 1*. Paper 93.[https://jdc.jefferson.edu/si\\_ctr\\_2022\\_phase1/93](https://jdc.jefferson.edu/si_ctr_2022_phase1/93)

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's [Center for Teaching and Learning \(CTL\)](#). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Phase 1 by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: [JeffersonDigitalCommons@jefferson.edu](mailto:JeffersonDigitalCommons@jefferson.edu).

## **SI/CTR Abstract**

**Word count: 249 words**

### **Neurostimulants to Improve Consciousness in Acute Comatose Patients**

**Lyena Birkenstock, Dr. Mohammed Kananeh\***

Patients in the neurology intensive care unit (NICU) suffering from coma have variable outcomes, even once the underlying condition has been treated. Coma is a detrimental condition with a high risk for mortality and disability. Currently, there is not a specific treatment regimen to treat, or even improve, comatose patients. In this study, we set out to compare the efficacy and side effect profile of different neurostimulants, including modafinil, adderall, and zolpidem. The target population includes adult patients in the Jefferson NICU with a diagnosis of persistent encephalopathy, despite the resolution of their admitting diagnoses. Patients are administered medication as part of a tier system. Improved arousal is measured using the Glasgow Coma Scale (GCS). Following data analysis through RedCap, results may show differential improvements in GCS based on the different stimulant medication administered to each patient.\* For example, the data could show significantly larger increases in GCS scores for patients following administration of modafinil than following zolpidem or adderall. Data acquisition will include other confounding factors like sedation, renal or liver failure, infections, or seizure medications, which could impact arousal in patients. If any of these medications show statistically significant improvement in GCS, this would support the hypothesis that there is differential efficacy between these three medications. Each of these medications has previously been shown to improve consciousness in patients with coma in case reports and small studies. This project represents a larger scale

treatment analysis that could lead to modifications in treatment for acute coma at Jefferson.

*\*Results are still pending the finalization of data collection and subsequent analysis*