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SI/CTR Abstract

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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*