Medication and its Effect on Safe & Sound Protocol Therapy Outcomes in a Pediatric Population

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Background and Hypothesis: The current study evaluated the effect of different medications on a child's response to the Safe & Sound Protocol (SSP) therapy. Informed by the Polyvagal Theory and the evidenced relationship between state regulation and autonomic imbalance, the therapy aims to improve state dysregulation which can manifest in children as emotional reactivity, sensory processing issues, and auditory sensitivities. Prior studies have shown a reduction in auditory hypersensitivities after the SSP therapy plus evidence shows SSRIs and stimulants have a positive impact on hearing in the presence of background noise. We hypothesized that a) the SSP could improve treatment response in those taking neurotransmitter-altering medication due to synergistic effects or b) it could show reduce treatment response due to sensitivities already being managed by medication.

Project Methods: Children in the study underwent a month of the SSP therapy with auditory processing standardized parent reports (Brain Body Center Sensory Scale) taken prior to treatment then approximately 1 week and 4 weeks after treatment. The data was then separated into different medication groups: stimulants (n=4), non-stimulant neurotransmitter altering medications (n=4), and other non-neurotransmitter altering medications (n=9) such as albuterol. Non-medication and medication group outcomes were then compared to identify significant differences between the groups using independent and paired samples t-tests.

Results: The results from this study found a significant reduced response to the SSP in children taking non-stimulant neurotransmitter altering medications, which included both sertraline, a selective serotonin reuptake inhibitor, and guanfacine, an α2A-adrenergic agonist. In addition, the non-neurotransmitter altering medication group was the only medication group that showed significant improvement in hypersensitivities while each non-medication group improved in hypersensitivity and hyposensitivity.

Potential Impact: Commonly-used guidelines for SSP are to maintain typical medication use during the intervention. This study, the first to systematically assess treatment response to the SSP by medication use, could inform how clinicians implement both SSP and medication treatments concurrently. However, these results are based on very small medication groups, therefore follow-up studies with larger samples are necessary to inform current clinical practices.