Introduction

- Multiple children seen in the Nemours/AIDHC multidisciplinary cerebral palsy (CP) spasticity clinic have been found to have extremely difficult to control spasticity or dystonia.
- Many of these children also met DSM-IV-TR/DSM5 criteria for diagnosis of anxiety, triggering the question of the relationship between the two processes.
- Particular areas of the brain, including the basal ganglia, are more susceptible to hypoxic, ischemic or metabolic insult and are related to both movement, cognitive function and mood control.
- This extrapyramidal modulator is involved with higher-order cognitive aspects of motor control as well as the planning and execution of complex motor strategies, influencing the increase or decrease of motor output.
- We hypothesize that improved control of anxiety will result in improved function with decreased tone and excess movement.

Methods

- Patients with both difficult to manage spasticity or dystonia along with components of anxiety identified at clinic visits.
- Patients and families interested in participating had at least 1 outpatient psychology visit for either individual and/or family therapy and were followed up with future office visits.
- Patients continued with appropriate medical management, including titration of oral and intrathecal spasticity medications and agents for movement disorders (ie Sinemet).
- Changes in mood and tone were based on both patient and family report and clinician evaluation at subsequent visits as documented in the chart.

Discussion

- The addition of psychology support in the CP program has brought to light a significant number of teenagers with anxiety disorders in addition to motor deficits of cerebral palsy. We have noted over a dozen children with this dual diagnosis.
- In some cases onset or worsening of underlying anxiety appears to be linked to worsening of spasticity or movement disorder which is often refractory to available medical management.
- Addition of mental health support with individual and/or family therapy along with judicious use of medications may improve mood and physical functioning.

Conclusions

- The exploration of anxiety disorders in children with CP is ripe for study, most notably in regards to the link between anxiety and worsening of spasticity and dystonia.
- We look forward to continuing to further pursue this link, enriching the knowledge of anxiety disorders in CP and their link to patient function. Our plans include a formalized approach to instituting psychology support and further cognitive surveillance of outcomes using quality of life, anxiety, and spasticity measures in this population.
- Further research looking at the relationship of anxiety and spasticity vs movement disorders, the cognitive level of patient function, and/or the impact of structured psychological interventions and medications will be helpful in the future treatment of these patients.

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The Role of Anxiety in Children with Cerebral Palsy with Spasticity and Movement Disorders: A Brief Case Series

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Brief Case Synopses

- 17 year-old male with history of spastic quadriplegic CP, treated with intrathecal baclofen, intellectual disabilities and history of anxiety and depression. He was noted to have increased tone, often triggered by anxiety, along with a “stallure” reflex, especially when discussing difficult issues such as a recent death in the family. The patient received several sessions of psychotherapy along with a low-dose SSRl. He and family noted an improvement in tone along with better overall functioning.
- 15 year-old female with quadriplegic CP with spasticity and dystonia, treated with intrathecal baclofen, cognitively intact with dysarthric speech. Mental health history included anxiety, emotional volatility, verbal aggression and agitation with family stressors and limited community resources. The patient was seen for worsening anxiety, triggering increased tone, often with dramatic movements of her arms and legs. She was seen for two visits with limited improvement and referred to community practitioner closer to her home for on-going care.
- 22 year-old female with spastic quadriplegic CP, treated with intrathecal baclofen, and history of anxiety and depression. She was initially referred due to symptoms of worsened anxiety and depression, which coincided with on-going pain symptoms, resulting in inability to continue at college independently. The patient had minimal improvement with short-term intervention (e.g., deep breathing/imagery before a medical procedure) however these gains were not able to be maintained without on-going treatment. It is unclear to what degree these symptoms were being worked on via the community provider, as she has since sought treatment closer to home.
- 13 year-old male with quadriplegic CP mixed-movement disorder (dystonia and athetoid movements), treated with intrathecal baclofen, as well as intellectual disabilities and limited speech. The patient presented with concerns of anxiety with physical manifestations (swearing, shaking, increased movements and startle). He was seen by psychology and had limited improvement with behavioral interventions but did show marked reduction in these episodes with initiation of an SSRI.