



"Nuestros niños, nuestros pacientes, nuestra razón de ser"

TÍTULO: Paediatric Dystonia and Deep Brain Stimulation: Does Timing Affect Outcomes?

INTRODUCCIÓN/OBJETIVOS: Dystonia is one of the most common neurological movement disorders in the paediatric population. Both motor and nonmotor symptoms have the potential to greatly impact the patient's quality of life (QoL). When conservative treatment fails, patients may benefit from deep brain stimulation (DBS). However, we still lack conclusive data about the most effective time to perform this procedure.

MATERIAL Y MÉTODOS: We conducted a retrospective analysis of the paediatric patients submitted to DBS since 2009 until 2025, focusing on the influence of time differential between diagnosis and DBS on QoL and medication reduction. We considered "*Time to surgery*" the amount of time between diagnosis and DBS, with a cut-off point on 10 years after diagnosis. To measure the DBS's impact on the patient's life, we use Burke-Fahn-Marsden Dystonia Rating Scale (BFMDRS) Disability Scale. We defined *mild-improvement* as a reduction of up to 20% of preoperative score on BFMDRS Disability Scale and a *significant-improvement* as a reduction greater than 50%.

RESULTADOS: 8 patients were submitted to DBS for dystonia: 7 targeting the internal globus pallidus (GPi) and 1 the subthalamic nucleus (STN). Mean follow-up time was of 74 months and an overall survival of 17 years and 10 months. Median "*Time to surgery*" was 5 years, counting 5 patients with less than 10 years since diagnosis until DBS. In this sample, no statistically significant association was observed between longer "*Time to surgery*" and lack of benefit with DBS. Similarly, longer "*Time to surgery*" did not preclude a reduction in medication. Both parameters were accessed by Mann-Whitney U-test ($p > 0.05$)

CONCLUSIONES: DBS is safe and effective in paediatric dystonia, improving disability and reducing medication, even years after diagnosis. Longer *Time to surgery* did not negatively impact outcomes, highlighting that DBS can offer meaningful benefits regardless of surgical deferral timing.