

# Safety and efficacy of propofol-based procedural sedation in children with cerebral palsy undergoing botulinum toxin A injections.

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**Introduction:** Pediatric patients with cerebral palsy (CP) often undergo intramuscular botulinum toxin injections to manage their spasticity. These injections are painful and often require adequate procedural sedation and analgesia. Patients with CP have a higher risk of sedation-related complications overall. We propose that propofol-based sedation is a safe and effective regimen for children with CP undergoing botulinum toxin injections.

**Methods:** This is a retrospective analysis of all children with CP undergoing propofol-based sedation for injections with botulinum toxin A between February 2013 and September 2017. An initial bolus of 2 mg/kg of propofol was administered with supplemental boluses as needed to achieve deep sedation. Propofol dosages, adverse events, serious adverse events, and sedation time parameters were reviewed.

**Results:** A total of 345 procedural sedations were performed. Patient ages ranged between four and nine years. A vast majority of patients were ASA II. Sedations were successfully completed in 100% of patients. The average dose of propofol was 4.7mg/kg. Adverse events were encountered in 10% of procedures. Adverse events included hypoxemia responsive to supplemental oxygen (9.6%) and transient apnea (1.4%). Of all patients, 19% required supplemental oxygen by nasal cannula during the procedure. The mean procedure time, recovery time and total sedation time were 10, 11 and 33 minutes, respectively.

With regard to patient variables including age, weight, dose of propofol and sedation time, there was no association with increased odds of adverse events. However, patients with longer procedures had an increased need for oxygen supplementation ( $p=0.0438$ ).

**Discussion:** We conclude that propofol is safe and effective in children with cerebral palsy undergoing procedural sedation for intramuscular injections with botulinum toxin A. The adverse effects encountered were related to airway and respiratory complications secondary to their musculoskeletal deformities, which emphasize the importance of close cardiorespiratory monitoring and airway management in these patients.