

Autism Spectrum Disorder and the Pediatric Sedationist A Case-controlled Study to Evaluate Resource Utilization

Karaga MK, Pharm D¹, Wisniewski BL, MD², McCracken CE PhD^{2,6}, Simon HK, MD, MBA^{1,2,3}
Grunwell JE, MD, PhD^{2,4}, Tarquinio K, MD^{2,4}, Sidhu NK, MD^{2,5,7}, Kamat P, MD, MBA, FCCM^{1,2,4}

¹Children's Healthcare of Atlanta at Egleston

²Department of Pediatrics, Emory University School of Medicine

³Division of Pediatric Emergency Medicine

⁴Division of Pediatric Critical Care Medicine

⁵Division of Pediatric Neurology

⁶Pediatric Biostatistics Core

⁷Marcus Autism Center

Introduction

Children with autism spectrum disorders (ASD) present a challenge to the sedationist due to communication barriers, complex behaviors, mental health problems, and perception of the need for additional resources. Our objectives were to compare patients with ASD undergoing pediatric procedural sedation (PPS) with non-ASD controls to 1) Evaluate number of providers required to accomplish sedation, and total length of stay (from time of registration to time of discharge) and 2) detect differences in adverse event and serious adverse event (SAE) rates.

Methods

A two-year matched retrospective case-control study of 79 ASD and 78 non-ASD controls requiring PPS was conducted. Categorical variables were analyzed using chi-square test, whereas a Wilcoxon Rank-Sum test was utilized for continuous variables.

Results

Median age was 7.9 years, 75.0% of patients were male, and 84% were ASA-PS II or greater. Non-matched baseline characteristics were similar between groups. Propofol was the primary sedative used (97.5%). Although the overall AE and SAE rates in this study cohort were higher than previously reported from the Pediatric Sedation Research Consortium, there were no significant differences between the two group (ASD 28.9% vs. Non-ASD 31.3%, $p=0.73$). The need for three or more providers between groups was 35.4% vs. 26.3% ($p<0.05$). There was no clinically significant difference in the duration of sedation (51 vs. 57 minutes, $p<0.05$) or the total length of stay (207 vs. 214 minutes, $p=0.135$). The overall procedure completion rate was 98.1%.

Discussion

Pediatric patients with autism spectrum disorders were able to be sedated for procedures with a similar adverse event and procedure completion rate compared to controls. However, a higher percentage of patients with autism spectrum disorders required the assistance of additional providers to accomplish procedural sedation. Further ongoing studies are underway to evaluate additional nuances in their care and resource utilization.