Perioperative Management of Pediatric Patients with Autism

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Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental disorder in which patients suffer from deficits in social communication and exhibit increased sensitivities, anxieties, and irritable behaviors[1]. To date, 1 in 44 children are diagnosed with ASD[2]. Thus, healthcare providers must utilize alternative treatment modalities when working with this patient population to account for these behavioral differences. One such identified treatment modality is the use of general anesthesia (GA) to complete surgical procedures. A better understanding of the anesthetic considerations of children with ASD as compared with those of non-ASD children, may help facilitate the development of an individualized perioperative management plan for this unique patient population. The purpose of this study was to investigate the perioperative experience of children with ASD compared to Non-ASD children undergoing general anesthesia (GA) for comprehensive dental treatment.

Methods

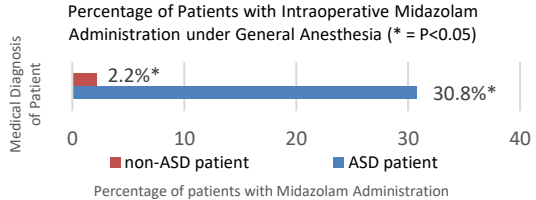
A retrospective chart review was completed at New York City Health + Hospitals / Bellevue. Patients diagnosed with ASD who received comprehensive dental treatment under GA between April 1, 2019, and April 1, 2020, were included in the study. The control group was from Non-ASD patients within the same parameters. Data was collected from electronic health records EPIC and Dentrix, and included: age, sex, ethnicity, race, medical history, medications administered during general anesthesia (including preoperative, intraoperative and postoperative), post-operative nausea and vomiting (PONV) status, pain scale rating upon discharge, procedure start and finish times, intubation and extubation times, anesthesia start and stop times, and PACU start and stop times.

Results

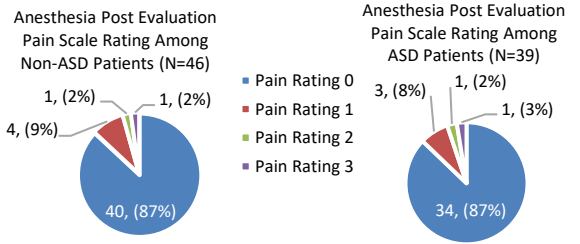
Table 1.0: Demographics of ASD and Non-ASD Patients (* = P<0.05)

	ASD	Non-ASD	Overall
Total Number of Patients	39	46	85
Average Age in Years*	6.7	4.8	5.6
Sex (%)*			
Number of Males	31 (79.5)	26 (56.5)	57 (67.1)
Number of Females	8 (20.5)	20 (43.5)	28 (32.9)
Race (%)			
Other	24 (61.5)	35 (76.1)	59 (69.4)
Asian	9 (23.1)	9 (19.6)	18 (21.2)
White	4 (10.1)	0 (0)	4 (4.7)
Black/African American	1 (2.6)	1 (2.2)	2 (2.4)
Hawaiian/Pacific Islander	1 (2.6)	0 (0)	1 (1.2)
Alaskan/Native American	0 (0)	1 (2.2)	1 (1.2)

A total of 20 intraoperative medications were identified with a majority use of Fentanyl (98%), Propofol (95%) and Ondansetron (73%) in ASD and non-ASD groups.



Results (continued)



Most (95%) ASD patients reported "No" postoperative nausea/vomiting (PONV). Independent t-tests determined there was no significant difference in PONV, pain scale rating upon discharge, procedure start and finish times, intubation and extubation times, anesthesia start and stop times, and PACU start and stop times between both patient populations.

Conclusions

- ❖ Perioperative management of pediatric patients with ASD is comparable to that of non-ASD children, aside from the use of Midazolam.
- ❖ Midazolam was used more commonly in patients with ASD intraoperatively
- ❖ Future directions include replication of this study at various other hospitals to compile a larger and more diverse data set.

References

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