Medication Profile of Pediatric Patients Undergoing Dental Rehabilitation Under General Anesthesia

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Introduction

With reported rates of dental rehabilitation under general anesthesia increasing, the pediatric dentist should expect to utilize this modality throughout their career.[1] As with any procedure, certain risks must be accepted by the patient and/or guardian with the administration of general anesthesia.[2] Even if complications are rare, the practitioner should do everything in their power to minimize this occurrence. A thorough understanding of the patient's medical history and medication profile is imperative. The inventory of medications provides insight into the pattern of medication use among children, and highlights potential treatment of systemic medical conditions. This study was undertaken to provide further insight into the pattern of medication use among children, undergoing outpatient dental surgery in Toledo, Ohio.

Purpose

The purpose of this study is to evaluate the medication profile of pediatric patients undergoing outpatient dental surgery at the University of Toledo College of Medicine and Life Sciences Department of Dentistry. The study team will be aiming to answer what medications our patients undergoing outpatient dental surgery are taking.

Results

There were 10 age groups identified in the study population, including: 3-, 4-, 5-, 6-, 7-, 8-, 9-, 10-, 11-, and 13-year-olds. Eleven patients were five-years-old and represented 22% of the entire study population. The gender of the study population was also examined. 28 of the subjects of the study were female, and 22 of the subjects were male. Females represented a greater proportion, accounting for 56% of the subjects.

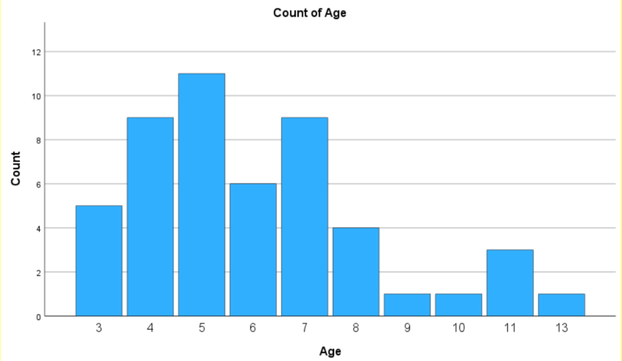
Material & Methods

Data was collected from patients, who underwent outpatient dental surgery administered by the University of Toledo College of Medicine and Life Sciences, between the months of April 2023 and October 2023. Data included age of patient, gender of patient, and current outpatient medications. The data was recorded in a Microsoft Excel spreadsheet. Medications were categorized by drug class, using classification identified by the database on www.drugs.com

Age * Gender * Prescription Crosstabulation

Count

Prescription			Gender: Male	Female	Total
yes	Age	3	2	2	4
		4	4	3	7
		5	1	9	10
		6	2	1	3
		7	3	4	7
		8	3	1	4
		9	0	1	1
		10	0	1	1
		11	2	1	3
		13	1	0	1
	Total		18	23	41
no	Age	3	1	0	1
		4	1	1	2
		5	1	0	1
		6	0	3	3
		7	1	1	2
	Total		4	5	9
Total	Age	3	3	2	5
		4	5	4	9
		5	2	9	11
		6	2	4	6
		7	4	5	9
		8	3	1	4
		9	0	1	1
		10	0	1	1
		11	2	1	3
		13	1	0	1
	Total		22	28	50



Sixty-five unique prescriptions were categorized into 33 different drug classes and 1 other category:

1. Analgesics
2. Andrenergic Bronchodilators
3. Antiandrenergics
4. Anti-asthmatics
5. Antibiotics
6. Antihistamine
7. Antidiarrheals
8. Antifungals
9. Anti-tussive
10. Atypical Antipsychotic
11. Anxiolytic
12. Anticonvulsant
13. Cardiovascular Agents
14. Chemotherapeutics
15. CNS Stimulant
16. Diuretic
17. Emollient
18. Gastrointestinal Agents
19. Glucocorticoids
20. Hormonal Agents
21. Laxative
22. Leukotrine Modifiers
23. Nasal Steroid
24. Neuramidase Inhibitor
25. Nutritional Supplement
26. Non-Sulfonylureas
27. Proton Pump Inhibitor
28. Sedative Hypnotics
29. Selective Serotonin Reuptake Inhibitor
30. Serotonin Blocker
31. Skeletal Muscle Relaxant
32. Topical Steroid
33. Vasopressor
34. Others

Results

In our sample, it was reported that 5-year-olds were taking the most medications. Ten of the 11 five-year-olds presented with at least one medication. No difference was found between gender and reported medications in all age groups. Analgesics (17.3%) were the most prescribed drug class, followed by anti-asthmatics (11.5%), antihistamines (9.6%), nutritional supplements (07.7%), and nasal steroids (05.8%). Acetaminophen (09.5%) was the most prescribed drug of the study, followed by ibuprofen (07.9%), albuterol (07.1%), polyethylene glycol (04.8%), and fluticasone propionate (04.8%).

Discussion

The hopes of this study were to provide insight into the medication profiles of pediatric patients at the University of Toledo. Although the most prevalent drug classes and medications were identified within the study population, our results may have been affected by a small sample size. Additionally, there may have been confounders present during the study. One is that parents may not always provide a complete medication profile when completing their child's medical history.

Conclusion

Based on the findings from this study, the top five medications used by our sample population were acetaminophen, ibuprofen, albuterol, polyethylene glycol, and fluticasone propionate. Further research is indicated. Future projects may include a larger sample size. Additionally, investigation into the medication profile in relationship to ASA Physical Status Classification System is warranted. We may have achieved different results if we had surveyed the parents instead utilizing medications reported in the electronic medical record.

References:

1. Rudie, M., et al. Trends and Characteristics of Pediatric Dentistry Patients Treated under General Anesthesia. J Clin Pediatr Dent (2018) (4):303-306.
2. Chen, Y., et al. A 10-year trend of dental treatments under general anesthesia of children in Taipei Veterans General Hospital. J Chin Med Assoc. (2017) (4):262- 268.

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