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Post-Discharge Adverse Effects Following Moderate Sedation

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ABSTRACT

- This prospective study reported via a questionnaire and a post-op call at 8 hours and 24 hours on the post-discharge adverse effects following moderate sedation in ASA I and II patients between the ages of 2-6 years of age.
- Due to the sample size, there was no statistical significance in the adverse events, between the age groups, nor the route of administration.

AIM

- To report and to determine the differences in the post-discharge adverse events following moderate sedation with midazolam, meperidine, and hydroxyzine, and in combination, within an 8- hour and 24-hour time period.

BACKGROUND

- Moderate sedation is a state in which there is purposeful response to stimuli or verbal commands without airway intervention, adequate spontaneous ventilation, and maintained cardiovascular function (1).
- The important guideline for sedation is to ensure patient safety, alleviate discomfort and pain, manage anxiety, control improper behavior and movements, and return the patient back to baseline post-sedation (2).
- ASA I or II patients are considered safe candidates for sedation (2).
- Patients younger than 6 years of age are at a greater risk of adverse events that affect their respiration and airway (2).
- The pharmacokinetics can be unpredictable and may require longer in-office monitoring that should extend into the post-discharge time period for adequate airway patency (2, 5).

METHODS

- This was a prospective study following moderate sedation to report any post-discharge adverse events that may arise within 8-hours and 24-hours.
- The study recruited approximately 50 ASA I and ASA II (both male and female children), in the age range of 24 months to 5 years and 11 months old with consent from their legal guardian. 10 patients were lost to follow up.
- The sedation and dental treatment was with agents midazolam, meperidine, and hydroxyzine.
- Each parent and legal guardian was asked to complete a post-discharge questionnaire at the the 8-hour post-discharge time period and the 24-hour post-discharge time period.
- The investigator then ca;;ed the legal guardian at the 8 hour and 24 hour time period to follow-up to obtain updated responses from the questionnaire.

REFERENCES

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RESULTS

	Midazolam IM only	Midazolam IM + Hydroxyzine PO	Midazolam IM + Meperidine PO + Hydrozyzine PO	Midaolam IM + Meperidine IM + Hydrozyzine PO	Midazolam PO + Hydroxyzine PO	Meperidine PO+Hydrozyzine PO	Midazolam PO + Meperidine PO + Hydroyzine PO	Fisher p-value
Slept on the way home	0.9	0.9	0.45	0.45	1.8	1.8	2.7	
Did not sleep on the way home	1.1	1.1	0.55	0.55	2.2	2.2	3.3	0.75
Asleep and easy to awaken	0.9	0.9	0.45	0.45	1.8	1.8	2.7	
Asleep and not easy to awaken	0.6	0.6	0.3	0.3	1.2	1.2	1.8	
Awake and alert	0.5	0	0.5	0.5	0.15	0.15	0.15	
Awake but drowsy	0.5	0.5	0	0	0	0	0.05	0.426
Agitated	0.5	0.5	0.25	0.25	1	1	1.5	
Normal	1.4	1.4	0.7	0.7	2.8	2.8	4.2	
Withdrawn	0.05	0.1	0.05	0.05	0.2	0.2	0.3	0.825
Less active than usual	0.9	0.9	0.45	0.45	1.8	1.8	2.7	
Same as usual	1.1	1.1	0.55	0.55	2.2	2.2	3.3	0.902
Hyperactive	0	0	0	0.05	0	0	0	0.02
# of subjects	2	2	1	1	4	4	6	

CONCLUSION

- 20 subjects completed the questionnaire between the ages of 2-6, ASA I and II
- 10 subjects were lost to follow-up.
- Due to the sample size, there were no statistical significance between the different variables.
- In comparisons between the different ages (2-3 vs 4-5), and the IM and PO regimens, there does not appear to be any statistical significance.
- Recruitment of more subjects for future comparison is needed to run proper statistical analysis.