Frontline Nurse-Initiated Interventional Research: Use of Distraction Versus Oral Midazolam in Reducing Pediatric Perioperative Anxiety

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Disclosure

- We have no actual or potential conflict of interest in relation to this presentation.

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  [West Coast University Logo]
Learning Objectives

1. Describe at least two undesirable side effects of oral midazolam when administered preoperatively to children

2. Outline at least three statistically and/or clinically significant research findings on the use of interactive electronic distraction (iPad™) in reducing pediatric preoperative anxiety

3. Formulate how at least two study findings can be applied into nursing practice
“Olivia”

4 yr old

T&A

Preop Anxiety

Versed-usual treatment
Adverse Effects Of Oral Midazolam

- Sedation
- Irritability
- Agitation
- Delirium

AFTER MIDAZOLAM
In children (4-12 years) undergoing outpatient surgery, is distraction with an iPad™ effective in reducing preoperative anxiety compared with oral midazolam?
Single-blinded prospective comparative with randomized assignment, into one of two groups:

- **iPad™ (experimental)**
  - n=51

- **oral midazolam (control)**
  - n=51
Inclusion Criteria

- Ages 4-12
- ASA I or II
- Outpatient procedure ≤ 1.5 hours
- English speaking
Exclusion Criteria

- Behavioral/psychiatric issues
- Emergent procedures
- Prior anesthesia over the age of 2
- Non-English speaking
Primary Outcome Measures

**Preoperative Anxiety**
- Baseline
- Parent separation
- Mask induction

**Emergence Delirium**
- Awakening
- 15 minutes later
Outcome Measures

- Parent perception of child anxiety (baseline, separation)
- Parent satisfaction with separation
- Time of PACU arrival to DC home
- Post-Hospitalization Behavior Questionnaire (Day 7 & 14 postop)
Study Interventions

iPad™ VS Midazolam
Modified Yale Preoperative Anxiety Scale (baseline, parent separation & mask induction)

- Activity
- Vocalization
- Emotional Expression
- State of Arousal
Pediatric Anesthesia Emergence Delirium (awakening & 15 min later)

- Eye contact
- Awareness of surroundings
- Consolability
- Restlessness
- Purposeful actions
Results
iPad™ group demonstrated significantly decreased preoperative anxiety at times of separation and induction compared to Midazolam group (p<0.001).
Results: Emergence Delirium Scores

 iPad™ group had significantly lower scores 15-minutes post-emergence (p=0.014)
Results: Parent Perception of Child Anxiety (range 0-6)

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>midazolam</td>
<td>1.62</td>
<td>1.16</td>
</tr>
<tr>
<td>iPad™</td>
<td>1.80</td>
<td>1.14</td>
</tr>
</tbody>
</table>

Parents rated child’s anxiety lower at separation in both groups (p=0.002)
Results: Parent Satisfaction with Separation

No statistically significant differences in overall parent satisfaction between midazolam and iPad™ groups.
## Results: Time Outcomes

<table>
<thead>
<tr>
<th></th>
<th>midazolam</th>
<th>iPad™</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACU Arrival to Awakening</td>
<td>24 min</td>
<td>19 min</td>
</tr>
<tr>
<td>PACU Arrival to Discharge Home</td>
<td>124 min</td>
<td>99 min</td>
</tr>
</tbody>
</table>

iPad™ group went home **25 minutes sooner** than the midazolam group (p=0.001)
## Results: Post Hospitalization Behavior Questionnaire

### Day 7

<table>
<thead>
<tr>
<th>Treatment</th>
<th>n</th>
<th>Poor appetite (%)</th>
<th>Tantrums (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Midazolam</strong> (n=12)</td>
<td>25</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td><strong>iPadmin™ (n=9)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Poor appetite (11%)</td>
<td>Tantrums (11%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bad dreams (11%)</td>
<td></td>
</tr>
</tbody>
</table>

### Day 14

<table>
<thead>
<tr>
<th>Treatment</th>
<th>n</th>
<th>Poor appetite (%)</th>
<th>Tantrums (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Midazolam</strong> (n=9)</td>
<td>11</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td><strong>iPadmin™ (n=9)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Poor appetite (11%)</td>
<td>Tantrums (11%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trouble getting to sleep (22%)</td>
<td></td>
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</tbody>
</table>
Frontline Nurses & Research

Knowledge & skill

Empower families

Positive impact on patient outcomes

Collaborate


