A Randomized Controlled Trial to Compare Pain Medications for Children Undergoing Strabismus Surgery

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Background
- Every year approximately 1,000 children undergo eye muscle surgery provided by physicians at our institution
- All of these children will experience differing degrees of postoperative pain
- In addition to pain, children undergoing strabismus surgery frequently experience postoperative nausea and vomiting

Study Purpose
- The purpose of this study is to investigate optimal combinations of analgesia to create a standardized approach for pain management in pediatric patients undergoing surgery for strabismus

Methods
Sample
A convenience sample of 128 pediatric patients undergoing first or repeated strabismus surgery
Inclusion criteria:
- Children ages 3 to 10 years old
- ASAPS classification Class 1 or 2
- Caregiver present in the hospital
Exclusion Criteria
- Non English speaking children evaluated as an ASAPS Class 3 or 4
- No additional surgery performed at the same time
- Children with behavioral difficulties

Setting
- Participants were recruited from the SDS and CSCC of a pediatric Mid-western academic hospital

Instruments
- Baseline demographic data sheet
- Amsterdam Preoperative Anxiety and Information Scale (APAIS)/Cronbach’s alpha ≥ 70
- Modified Anxiety Scale (mYPAS) /Inter rater reliability=0.79
- rFLACC/inter-rater reliability 0.76-0.90

Outcome Measures
- Pain, Anxiety, Nausea, LOS

Data Analysis
- Univariate summary statistics were created for demographic and clinical background variables as well as pain and anxiety instrument measures to assess distribution
- Categorical variables were compared using Chi-square tests
- Continuous variables were compared using independent samples t-tests; non-parametric Mann-Whitney U tests
- Factorial ANOVA was used to assess a continuous dependent variable by two categorical independent variables
- Alpha was preset at 5% for all testing of significance (p<.05)

Significant Results
- rFLACC pain score upon SDS arrival was found to be significantly higher (more pain) among patients receiving Fentanyl as compared to those receiving hydromorphone (1.45 vs 0.93, U = 1762.0, p = 0.011).
- Pain during post-op call was reported more often among patients who received Fentanyl compared to those who received hydromorphone (60.9% vs 28.6%, χ²=14.212, df=1, p<.001)

Conclusion
- Standardize hydromorphone as the preferred agent for children undergoing strabismus surgery in a medication protocol forAnesthesia

References
