

Differences in Post-operative Analgesia between Hispanic and Caucasian Pediatric Patients

Author(s): N Jimenez, JR Zavaleta, H Bradford, K Seidel, LD Martin, FP Rivara, AM Lynn

Affiliation: University of Washington, Children's Hospital and Regional Medical Center, Seattle, Wa

Introduction: Reports in the adult literature indicate that pain treatment may vary as a function of a patient's ethnicity. (1-4) Most studies focus on the adult patient population and in the emergency department setting. There are no studies looking at differences in post-operative pain treatment in the pediatric population. Our objective was to look at opioid administration in the post-operative care unit (PACU) of one pediatric tertiary care center following routine ambulatory surgeries to study if there are differences between Hispanic and Caucasian children.

Methods: After Institutional Review Board approval, a retrospective cohort study from 2003-2005 was reviewed to compare analgesic requirements after ambulatory surgeries between Hispanic and Caucasian patients 2 months to 18 years of age. Patients who identified themselves as Hispanic or Latino on the hospital admitting form and who requested the presence of a translator were included in the study. Hispanic patients were then matched by age, gender, and type of surgical procedure to Caucasian patients. Any Hispanic patient unable to be matched by all 3 categories was excluded, along with any patient who carried the diagnosis of developmental delay. Intra- and postoperative analgesia were compared between the groups using Wilcoxon rank sum test because of non-normal distribution of the data. Chi-square test and Fisher's exact test were used for categorical variables. $P < 0.05$ was considered significant.

Results: 154 patients were identified, 77 Caucasian and 77 Hispanic with a mean age of 7.72 years (SD 3.95); 60% of patients were female. The most common surgery was tonsillectomy and adenoidectomy (61%). No significant differences were found in the type of inhaled anesthetic, IV anesthetic or use of regional techniques. Intraoperative opioid administration was identical in both groups (mean= 0.06 mg/kg of morphine equivalent, SD 0.08). Intraoperative non-opioid analgesia (Tylenol and Ketorolac) was more common in the Caucasian group ($p = 0.02$). This discrepancy required an adjustment of the comparison of post-operative opioid use between the groups. The median amount of opioid received in early recovery was 40% lower for Hispanic subjects (0.03 vs. 0.05 mg/kg, $p = 0.01$). (Table 1) Due to incomplete charting, postoperative pain scores were considered for only 99 of the original 154 patients (50 Hispanic and 49 Caucasian). There was no difference in pain scores. The median peak pain score was 5 during early recovery and 0 during late recovery for both groups.

TABLE 1: Amount of opioid in morphine equivalents (mg/kg) received during postoperative recovery:

Recovery phase	Hispanic Median (range)	Caucasian Median (range)	p-value unstratified test	p-value stratified test*
All surgeries				
Early recovery	0.03 (0-0.14)	0.05 (0-0.90)	0.09	0.01
Late recovery	0 (0-0.07)	0 (0-0.08)	0.11	0.13
Tonsils/adenoids only				
Early recovery	0.05 (0-0.14)	0.07 (0-0.90)	0.04	0.04
Late recovery	0 (0-0.07)	0 (0-0.08)	0.24	0.17

*stratification for intraoperative use of non-opioid analgesics. The strata were: none, Acetaminophen alone, and Ketorolac (with or without acetaminophen).

Discussion: This study suggests differences in postoperative analgesic treatment between Hispanic and Caucasian children, which are consistent with previous reports by Ng on differences in post-operative

pain treatment between Hispanic and Caucasian adults. (5) The cause of this difference is unknown. Prior authors have implicated patient/healthcare provider communication and attitudes, healthcare provider decision making, and access to pain medication as possible contributing factors. (1) However, our study shows that with less opioid administration, Hispanic and Caucasian patients had similar pain scores. Perhaps Hispanic children indeed require smaller amounts of opioid analgesics after surgical procedures due to genetic differences in pharmacokinetic parameters. Further studies are necessary to determine why such differences occur.

Refs:

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