Ca19] Prediction of Postoperative Maladaptive Behaviors in Children with PACBIS

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Background & Aims: Behavioral factors during outpatient pediatric surgery significantly contribute to postoperative outcomes. Although the existing real time scales [Induction Compliance Checklist (ICC) and modified Yale Preoperative Anxiety Scale (mYPAS)] identify childrens preoperative anxiety, they are limited because they do not assess childrens coping efforts or parent behaviors. Newly developed and validated behavioral assessment tool, the Perioperative Adult Child Behavioral Interaction Scale (PACBIS) can identify real time perioperative child and parent behaviors, and eventually help with real time behavioral interventions. The specific aim of this study was to correlate PACBIS with postoperative and post-discharge maladaptive behaviors in children.

Methods: Prospective observational study of 405 children, 3-12 years of age, ASA physical status 1 or 2 undergoing Tonsillectomies and Adenoidectomies (T & A) and their parents were assessed before surgery, during induction of anesthesia and in recovery room for their coping, distress, anxiety behaviors using PACBIS, mYPAS, ICC. Correlations between the validated PACBIS and postoperative pain and behavioral outcomes using pediatric Post-Anesthesia Emergence Delirium (PAED scores, Post-discharge Parental Pain Measurements (PPPM) and Post-Hospitalization Behavioral Questionnaires (PHBQ) on day 1 and day 7 following T & A surgery and discharge were analyzed.

Results: The PACBIS has strong concurrent validity with other existing scales in assessing perioperative behaviors at all phases, importantly during induction of anesthesia. Correlations of PACBIS measures correlated well with PAED, PPPM and PHBQ. For a 2 unit increase in PACBIS child distress measure during induction of anesthesia, going from a MILD (=0) to EXTREME (=2), there was a 6 point increase in the PAED. As PACBIS Child coping measure improves 2 units (MILD to EXTREME), we see a 45% reduction in the odds of severe pain measured by parents using PPPM on postoperative day 1-2. For a preoperative child distress increase of 2 units, we see a 4.6 fold increase in the odds of having a severe pain using PPPM on postoperative day 7-8. PACBIS was able to predict important post-discharge maladaptive behaviors assessed by PHBQ.

Discussion: The PACBIS is a perioperative specific validated "real time" tool for assessing behaviors of children and parents. PACBIS child and parental measures predict PAED, PPM and post-discharge new onset maladaptive behaviors. Parents influence their childrens postoperative maladaptive behaviors. Parents who coped well helped their children by reducing their distress. However, parents who exhibited negative behaviors worsened their childs distress which in turn increased the risk of childs post-discharge maladaptive behaviors. Prediction of children and parents at higher risk of poor postoperative behavioral outcomes before anesthesia induction and hospital discharge will help anesthesiologists tailor perioperative management. The real-time advantage of the PACBIS presents a number of future clinical utilities including immediate identification and modification of behaviors that are associated with poor perioperative outcomes in children.

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