Introduction

- Myringotomy tube placement (PET) is one of the most frequent pediatric procedures and is usually performed under inhalational general anesthesia alone
- Emergence delirium (ED) in children is a common complication of general anesthesia and can lead to patient harm, escalated nursing care, delays in discharge, and overall dissatisfaction with the perioperative experience

Objective

- To determine if intraoperative acupuncture reduces the incidence of ED in children undergoing PET placement

Methods

- Single center, randomized, controlled trial in children ages 1-6 years old, ASA I-II, undergoing PET placement
- Premedication with oral midazolam 0.5mg/kg determined by anesthesiologist
- After premedication, patients randomized to standard inhalational general anesthesia with or without acupuncture
- Four acupuncture needles placed after induction of anesthesia in bilateral Heart 7 (HT7) and ear Shen Men points and removed prior to leaving the operating room
- Patients received preoperative acetaminophen 12.5mg/kg PO and intraoperative ketorolac 0.5 mg/kg IM
- Patients emerged in the PACU with assessment by a blinded observer using the validated Pediatric Anesthesia Emergence Delirium (PAED) scale at the time of awakening and then at 5, 10, and 15 minutes
- Primary outcome was the highest PAED score at any time point with a PAED score ≥10 defined as ED

Results

- 98 participants completed the study, equally randomized to acupuncture and control groups
- All but two patients received oral acetaminophen and IM ketorolac
- 96 participants had bilateral PET procedures
- Acupuncture needles were in place for an average of 5.1 ± 6.3 minutes
- The highest PAED score at any time point was not significantly different between groups (acupuncture 11.7 vs control 11.3, CI: -2.17 to 1.52, p=0.73)
- Patients with PAED scores ≥10 was not significantly different between groups (acupuncture 71% vs control 63%, p=0.39)

Conclusions

- Intraoperative acupuncture at HT7 and ear Shen Men did not reduce the incidence of emergence delirium in children undergoing PET placement
- Limited duration of acupuncture needle placement may have decreased the efficacy of acupuncture
- It is unlikely that a larger study would demonstrate a clinically significant effect of intraoperative acupuncture on ED

References