Feasibility and Acceptability of Virtual Parental Presence on Induction of Anesthesia (VPPIA)

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Introduction

- Preoperative anxiety related to induction of anesthesia is associated with negative postoperative behaviors such as waking up crying, bad dreams, separation anxiety, and temper tantrums.[1]
- Current methods for anxiety reduction include premedication, parental presence in induction rooms, and distraction.[2,3]
- Virtual parental presence on induction of anesthesia (VPPIA) is a novel technique using video conferencing to connect families and patients during induction.
- **The goal of this study was to assess the feasibility and acceptability of VPPIA as a tool during induction at Cincinnati Children's Hospital Medical Center.**

Methods

- This prospective, observational study enrolled children ages 4-12 presenting for elective surgery with planned inhalational induction.
- Parents received training preoperatively to educate them on expected behaviors and ways to support their child during induction.
- A video call was initiated on two iPads prior to separation: one was held by the parents and the other held by research staff in front of the child. The video call continued during transport and induction.
- Parental and patient satisfaction were measured using standard questionnaires.
- Anesthesiologist and CRNA satisfaction were measured using the NASA Task Load Index (NASA-TLX) and the System Usability Scale (SUS).

Results

- A total of 30 children ages 4-12 years old (mean 7.7 years ± 2.2) undergoing elective surgery with planned inhalational induction were included.
- VPPIA caused no OR delays.
- Parents reported a high level of satisfaction with VPPIA (Figure 1).
- Patients reported high acceptability of VPPIA (Figure 2).
- Anesthesia staff indicated high levels of performance and usability and low levels of demand when VPPIA was used (Figure 3).

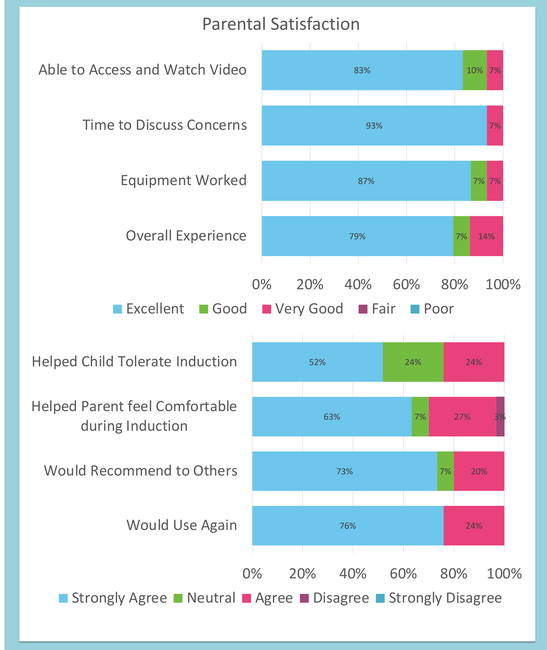

Figure 1: Parental Satisfaction Questionnaire Results

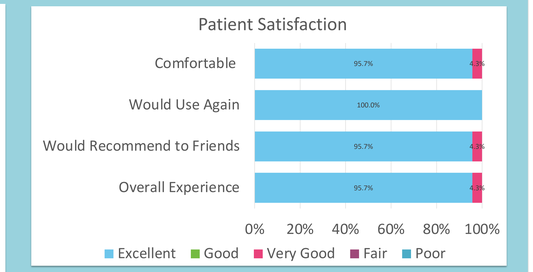

Figure 2: Patient Satisfaction Questionnaire Results

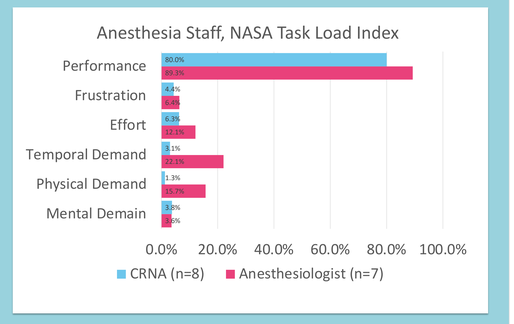

Figure 3: Anesthesia Staff, NASA-TLX Results

Conclusions

- VPPIA is feasible and acceptable and may serve as a useful alternative to parental presence during inhalational induction of anesthesia.
- Use of VPPIA did not cause OR delays and had low demand on OR staff, suggesting that it can be easily incorporated into the perioperative workflow.
- VPPIA was associated with high levels of patient and parental satisfaction, suggesting that it is well tolerated and embraced as an option for the alleviation of preoperative anxiety.
- VPPIA is a timely intervention during the COVID-19 pandemic as parental presence during induction was halted in many institutions. However, the acceptability and ease of use suggests that the use of VPPIA will likely persist beyond the pandemic.

Future Directions

- Further study is required to assess the efficacy of VPPIA compared to premedication, distraction, and other methods of preoperative anxiety reduction.
- Current studies are investigating the role of parental training prior to surgery on the efficacy of VPPIA.

References

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