C.S. MOTT CHILDREN'S HOSPITAL
MICHIGAN MEDICINE

#KnockTheNausea

Mary Daugherty BSN RN CPAN
Jennifer Grady BSN RN
Stephanie Machalicek BSN RN
Toni Szpara MSN RN ACNS-BC CNRN SCRN CCRN-K CPAN CAPA

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AMERICAN NURSES CREDENTIALING CENTER

Introduction & Background

Post-operative nausea and vomiting (PONV) is a major cause of distress in the PACU (Post-anesthesia Care Unit). It is associated with an increased risk of potential complications, patient dissatisfaction, and delayed discharge. The prolonged stay in PACU directly affects the efficiency of our patient throughput. Non-pharmaceutical therapies offer an alternative to antiemetic therapies with benefits in being noninvasive and inexpensive.

Problem/EBP Question

In pediatric post-operative patients ages 5-18, does aromatherapy reduce the incidence of PONV and therefore improve patient/family satisfaction when used adjunctively with current practice?

P - Pediatric post-operative patients
I - Aromatherapy
C - Current state/practice
O - Reduced PONV and improved patient/family satisfaction

Databases utilized were PubMed, Google Scholar, and CINAHL

Evidence

Post-operative nausea and vomiting (PONV) has been named "the big little problem" (Kapur, 1991). In the pediatric setting, PONV is the leading cause of morbidity. Severe cases of PONV is associated with complications such as bleeding, wound dehiscence, and aspiration (Rose 1999).

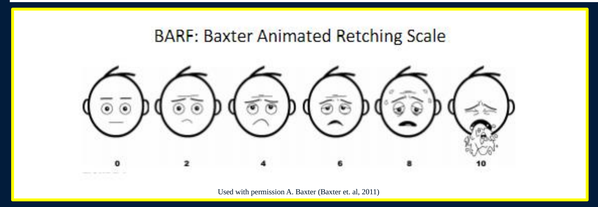
Aromatherapy with peppermint oil has been used as a remedy for gastrointestinal complaints. Research has been limited in the pediatric setting, it has been demonstrated that inhalation of peppermint vapors significantly reduced PONV and the requirement for pharmacologic antiemetics following gynecology procedures (Tate, 1997).

These select surgical services have been identified as patients who are at a higher risk of incidence of PONV; orchidopexy, testicular/ovarian torsion, inguinal hernia, hydrocelectomy, tympanoplasty/mastoidectomy, eye muscle correction (Hohne, 2014). The implementation of aromatherapy has shown to have a positive effect on PONV and should be considered to use as a complimentary therapy, or adjunctively with current practice antiemetics (Asay et. al, 2018).

The use of aromatherapy in reducing PONV is significant as it may increase patient satisfaction (Hodge 2014). There is a direct correlation between patient satisfaction scores and reimbursements in health care. Research has shown that patients with higher incidence of PONV and lower satisfaction scores, had higher costs related to decreased reimbursements (Falco, 2017).

Methods/Implementation

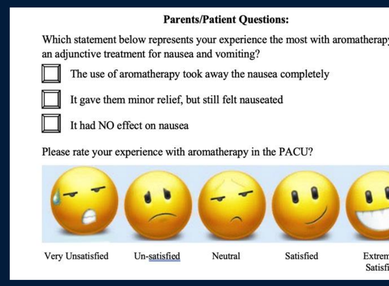
- The IOWA model was utilized.
- Education for staff and families was developed and implemented.
- Used a validated pediatric nausea/vomiting tool to measure PONV for patients
- Modified and implemented the BARF and Likert 0-5 nausea scale with authors permissions
- Choice of Ginger or Peppermint offered to patients with PONV
- A survey was developed for patients/parents to assess the effectiveness of aromatherapy
- Inclusion criteria:
  - Patients undergoing the following surgical procedures: orchidopexy, testicular/ovarian torsion, inguinal hernia, hydrocelectomy, tympanoplasty/mastoidectomy, and eye muscle correction.
  - Patients age 5-18
- Exclusion criteria:
  - all other surgical procedures.



Used with permission A. Baxter (Baxter et. al, 2011)

0 – No Nausea
2 – Nausea is anticipated.
4 – Nausea is reported. Able to tolerate food or medications by mouth.
6 – Nausea is persisting. Lacks appetite.
8 – Nausea ongoing. No appetite. Unable to tolerate food/medication by mouth.
10 – Nausea with dry heaves reported.

Used with permission L.Huckabay (Halpin et. al, 2010)



Findings/Outcomes

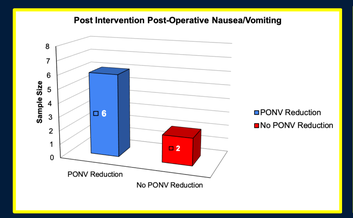
Pre-implementation data: 3 month period (7/1/2019-9-/27/2019) of pharmacological and non-pharmaceutical interventions were collected and analyzed.

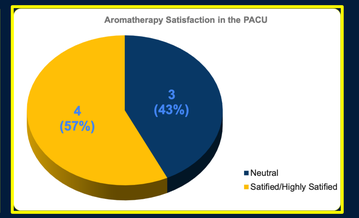
Post-implementation data: 3 month period (12/1/2020 – 2/28/2021) of same data in addition to PONV and patient satisfaction scores both pre and post aromatherapy implementation were collected and analyzed.

Post-implementation findings: 150 patients met inclusion criteria. 100 patients were eliminated due to failure to correctly complete the survey. Of the 50 surveys collected, only 20 were properly completed. An additional 12 surveys were eliminated due to patient denying nausea both pre and post intervention, therefore leaving the sample size of 8. Within this sample size, 6 reported a reduction in PONV and 2 reported no change or reduction in PONV.

Regarding patient satisfaction data: of the 20 completed surveys, 7 properly completed the satisfaction survey. With sample size of 7, 3 rated their experience "neutral" and 4 rated their experience "satisfied/extremely satisfied".

Limitations: This project was conducted during a global pandemic which brought unique challenges. Distributing the survey to inclusion patients was particularly difficult which directly effected completed survey rates. Another limitation included the inability to maintain adequate supply of both inhalers.





Implications

The use of aromatherapy is an integrative and holistic approach to help minimize patients' experience of PONV. Patients achieved some relief which aides in decreasing the chance of potential complications. In addition, patients noted to have a more satisfactory post-operative experience in the PACU, along with the option to take home their single oil inhaler.

Future goals: integrate BARF tool/Likert scale into electronic medical record as an objective way to document PONV within the institution. Spread the utilization of aromatherapy inhalers as an adjunct to current practice for patients in all PACU sites.

References

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