The Effects of Peppermint Oil on Patients with Postoperative Urinary Retention

Primary Investigator: Jamie Fryatt RN, BSN, CPN  Study Coordinator: Priscilla Bell RN, MSN, CPN
Study Personnel: Noel Julien RN, CPN; Paige Coffman RN, BSN, CPN; Grace Brown, RN, BSN, CPN; Bobbie Carter RN, MSN, CPN

Background
After surgery, orthopedic patients may experience the complication of postoperative urinary retention. When standard nursing interventions are not successful in relieving urinary retention, a provider order is obtained for urinary catheterization. In the pediatric patient, being catheterized can be traumatic, cause discomfort, and contribute to increased length of stay. The catalyst for this study came from a mother (a nurse) with experience using peppermint oil as a nursing intervention for urinary retention in the postpartum patient. A review of the literature listed peppermint oil as a nursing intervention for postpartum patients, no evidence was cited in support of this intervention. The literature search did not reveal valid studies using peppermint oil as an intervention for urinary retention. The Research Team wanted to discover if noninvasive, low risk peppermint oil would have an impact on pediatric postoperative patients.

Research Question
Will the inhalation of peppermint essential oil as an intervention for postoperative urinary retention, prevent some patients from the invasive catheterization procedure?

Inclusion Criteria
- Ages 3-17
- Continent
- Postoperative >6hours or experiencing discomfort from retention
- No allergy to peppermint
- No history of a seizure disorder

Control Group: 13 patients
- Patient able to void postoperatively: 54%
- Patient required catheterization: 45%

Study Group: 23 patients
- Patient able to void while patch on: 22%
- Patient able to void after patch removed: 13%
- Patient required catheterization: 65%

Methods
Study participant selection: Patients experiencing postoperative urinary retention not responding to routine nursing interventions were referred by nursing staff to a study team member. The patients were screened by a study member for inclusion criteria.

Procedure: After consent was completed, a study member applied a patch infused with peppermint essential oil and instructed patient to notify nurse when experiencing the urge to void. The patch was left on the patient for one hour and removed. If the patient was unable to void, the patient was catheterized per physician order. A survey was filled out by the study member answering questions about effectiveness and noting any side effects experienced by patient.

The control group: The data was pulled retrospectively via a documentation report. Each selected chart was manually reviewed by the primary investigator for inclusion criteria. In the control group, 13 patients met inclusion criteria.

Results:
The results were studied for statistical significance. Over a 13 month period, 23 patients were enrolled in the study. From this group, 15 voided within one hour of patch placement. Three of the participants were able to void after patch removal, avoiding catheterization. Five participants required catheterization. No adverse reactions were reported. Statistical analysis showed a p value= 0.07. There was a 32% decrease in catheterization from the control group.

Limitation: The retrospective report relied on accurate documentation to reveal patients meeting criteria causing the control group to be significantly smaller than the study group. A larger sample size in both groups would have increased the strength of evidence and statistical significance.

Conclusion: The use of peppermint essential oil had a positive impact on the targeted population by reducing urinary catheterization. Children’s Mercy Hospital has implemented peppermint oil as a noninvasive, low risk, nursing intervention for urinary retention. This can improve patient satisfaction and comfort by avoiding a catheter, while decreasing the risk for infection and length of stay.

Recommendations: Peppermint oil patches, along with three other essential oils, are now available hospital wide for patient use. Recommend additional study in other populations to replicate and strengthen the body of evidence.