

ANALYSIS OF POST OPERATIVE NAUSEA AND VOMITING IN THE POST ANESTHESIA CARE UNIT

Primary Investigator: Alison Partridge RN MSN CPAN

Roper St. Francis Healthcare Bon Secours St. Francis Hospital, Charleston, South Carolina

Co-Investigators: Suzanne Hunnicutt RN BSN CPAN, Carol Walker RN-BC BSN CPAN,
Christina Crook RN-BC, Shelley Stinson RN BSN CPAN

Consultants: *Winnie Hennessy PhD RN CHPN and Bonnie Dumas PhD, Statistician*

Introduction: According to ASPAN standards (2006), postoperative nausea and vomiting (PONV) is reported as the most frequently occurring postoperative complication and it affects “one third of surgical patients each year for a total of approximately 75 million persons” (p.232).

Identification of the problem: Our institution screens for at risk patients pre-operatively and most patients receive two prophylaxis medications with more depending on risk. Our rates are below 10%, but those that do suffer incur an increased length of stay (LOS) in PACU. This is a quality measure monitored at this facility. In 2015 we saw an average 12-22 minute increase in our LOS for PONV. With no national database to compare this to; our goal was to decrease the length of stay through first evaluating our current practices and then determining if prophylaxis methods impact PACU LOS.

Purpose of the Study: Concluding that the evidence for decreasing PONV length of stay in PACU is not fully understood, and given our experience, the purpose of this study is to determine what variables impact the PONV PACU LOS.

Methodology: This is a retrospective case-control design.

Sample: The intervention group was 30 patients who experienced PONV in PACU. Control group was 30 patients who did not experience PONV in PACU.

Inclusion: Patients who undergo a surgical procedure, receiving general anesthesia and recovering in the PACU.

Exclusion: Patients who are less than 18 years old

Measurement and Measures:

- Patients were randomly selected and charts were reviewed for the following variables:
- Procedure
- Length of Procedure
- Age
- Opioid Sensitivity (listed as an allergy)
- Preoperative antiemetic meds
- Intraoperative antiemetic meds
- Length between Zofran and end of case

- Nausea in PACU
- Vomiting in PACU
- Time between arrival into PACU and Zofran dose in PACU
- Other nausea treatment medications in PACU
- Treatment medication before or after Opioid
- Length of stay in PACU

Results: Determined by statistician using an alpha level of 0.10 due to this being an exploratory study. A logistic regression to ascertain the effects of age, gender, type of surgery, opioid sensitivity, length of procedure, and administration of pre-operative medicine, on the likelihood that patients have PONV nausea ($p=0.097$). Of the predictor variables, administration of pre-operative medicine ($p=0.082$) was statistically significant. The others, including age ($p=0.903$), gender ($p=0.722$), type of surgery ($p=0.380$), and opioid sensitivity ($p=0.615$) were not significant for these data. Patients not receiving pre-operative medicine had 6.41 lower odds of exhibiting PONV nausea than those who did receive medicine.

Multiple regression analysis performed to predict length of stay from timing of prophylactic medication in the OR and administration of a second dose in treatment of PONV was very statistically significant ($p<0.001$, $R^2=0.535$). Only the second dose for treatment of PONV added statistically significantly to the prediction of length of stay in PACU ($p<0.001$).

Discussion and Conclusion: Those that screened high risk and received a preoperative dose of preventative medication were still at a higher risk of having PONV. The team is looking into administering a different medication preoperatively to try and decrease PONV occurrence in high risk patients. The team is also looking into other options for post-operative treatment instead of a second dose of the prophylactic medication. They are also reanalyzing the data to determine if the timing of the prophylactic dose of medication impacts the occurrence of PONV.