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EFFECTIVENESS OF APFEL SIMPLIFIED RISK SCORE IN PREDICTING POST-OPERATIVE NAUSEA AND VOMITING IN DAY SURGERY UNIT



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Background

- One of the most common and distressing side effects following anesthesia and surgery is postoperative nausea and vomiting (PONV) (Gan, et al. 2014).
- Unresolved PONV leads to increased overall healthcare cost due to longer stay in post anesthesia care unit (PACU) and unanticipated hospital admission (Gan, et al., 2014).
- In the Day Surgery Unit (DSU) of Covenant Medical Center (CMC), the high incidence of PONV cases has resulted to patient's delayed discharge and nurses working longer hours.
- To prevent and manage PONV effectively, the Society for Ambulatory Anesthesia (SAMBA) has updated its guidelines to include a scoring system to assess PONV risk of a patient.
- Nurses can help in PONV prevention by preoperative identification of patients at risk for PONV and communication of risk to the anesthesia and surgical team (Hooper, 2015).
- Hooper (2015) also summarized the nurses' other roles in preventing PONV including minimization of intra and postoperative opioids by advocating for multi-modal pain management regimens and ensuring adequate IV fluid hydration of patients among others.
- Apfel simplified risk score (SRS) is one of the most commonly-used risk assessment tools consisting of four important patient-specific independent predictors for PONV risk, namely gender, history of PONV/motion sickness, non-smoker, and use of post-operative opioids (Gan et al., 2014).
- Apfel SRS is very simple (with only 4 risk factors), feasible and the most adequate tool for assessing patient's risk of PONV (Obrink, Jildenstal, Oddby & Jakobsson, 2014).

Purpose

- Since DSU-CMC presently does not have any PONV risk assessment tool, Apfel SRS tool will be tested and evaluated if it will effectively predict the PONV risk of a patient.
- To review current practices of the perianesthesia team on preventing PONV in surgical patients.

Methods

- A modified form with Apfel Risk Assessment Scores, medications given during surgery and recovery (PACU/DSU), and experience of PONV (PACU/DSU/24-hour post op discharge) was developed for the study.
- The study was done from May 7 to August 6, 2019 in DSU-CMC. All patients who had been given general anesthesia and would go home the same day were included in the study.
- DSU preop nurses assessed the patients' Apfel Risk Score prior to the procedure.
- DSU postop nurses recorded the medications given during surgery, PACU and postop area stay as well as experience of PONV in PACU, postop area and 24-hours post discharge.

Figure 1. PONV form used during the study

APFEL SCORE		Points	
RISK FACTORS			
Post-Operative Opioids			
Non-Smoker			
Female Gender			
History of PONV/Motion Sickness			
RISK SCORE = SUM			
Type of Surgery:			
Medications Given	Preop/During Surgery	PACU	POST-OP
Ondansetron			
Dexamethasone			
Scopolamine Patch			
Volatile gases (Nitrous oxide, sevoflurane, desflurane, isoflurane, halothane)			
TIVA (Propofol, thiopental, etomidate, ketamine and methohexital)			
Phenergan			
Versed (midazolam)/other sedatives			
Opioids for pain relief (Fentanyl, Dilaudid, Norco, Tramadol, Tylenol #3)			
Non-opioid for Pain Relief (Toradol, Ofirmev, Tylenol, Advil, Alleve)			
Nerve Blocks/Regional Anesthesia			
H2 Blockers (Pepcid)			
Haloperidol			
Aprepitant (Emend)			
Amisulpride (Barhemysys)			
Metoclopramide (Reglan)			
Anesthesia MD:			
Experience of PONV	PACU	POST-OP	24 HOURS POST D/C

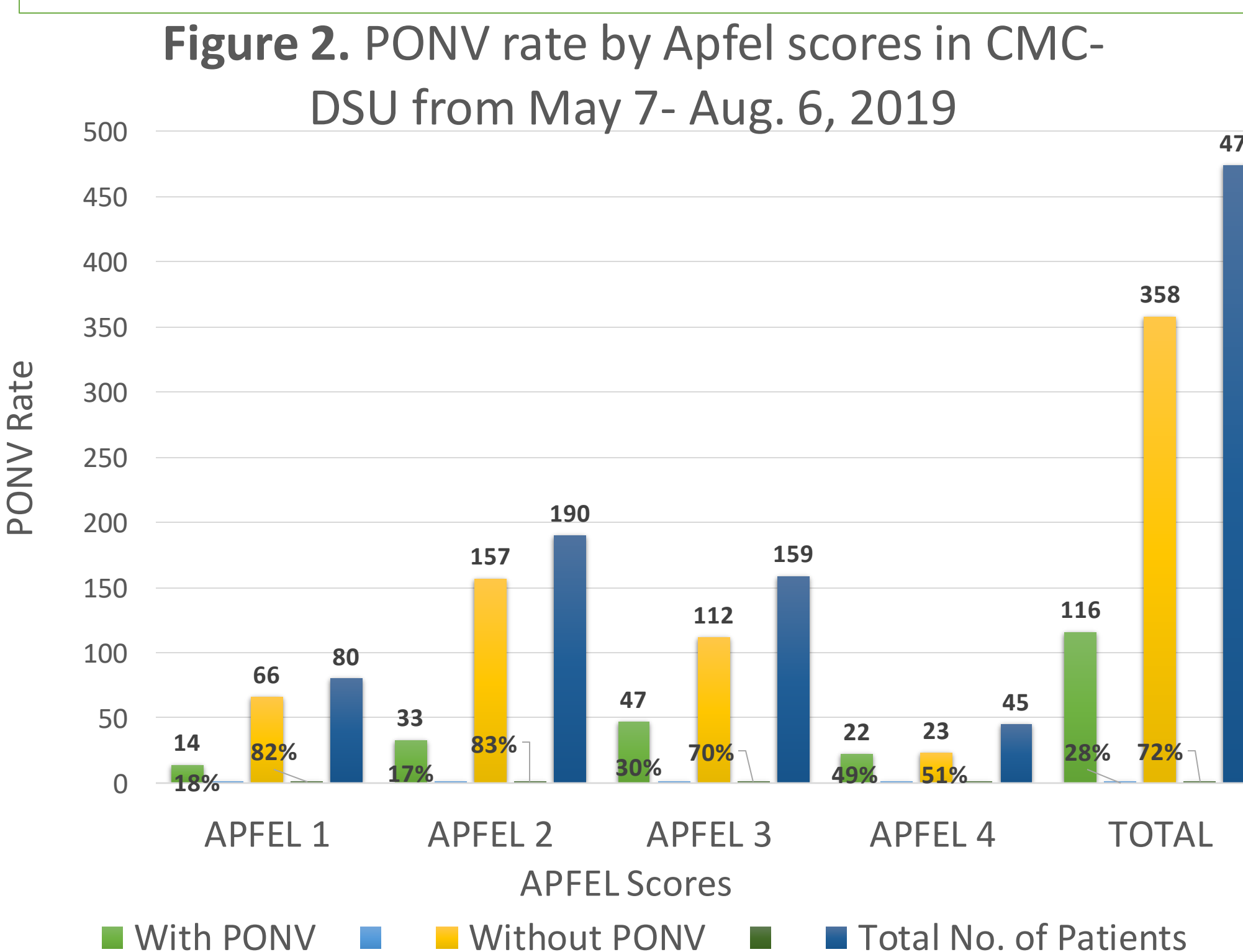
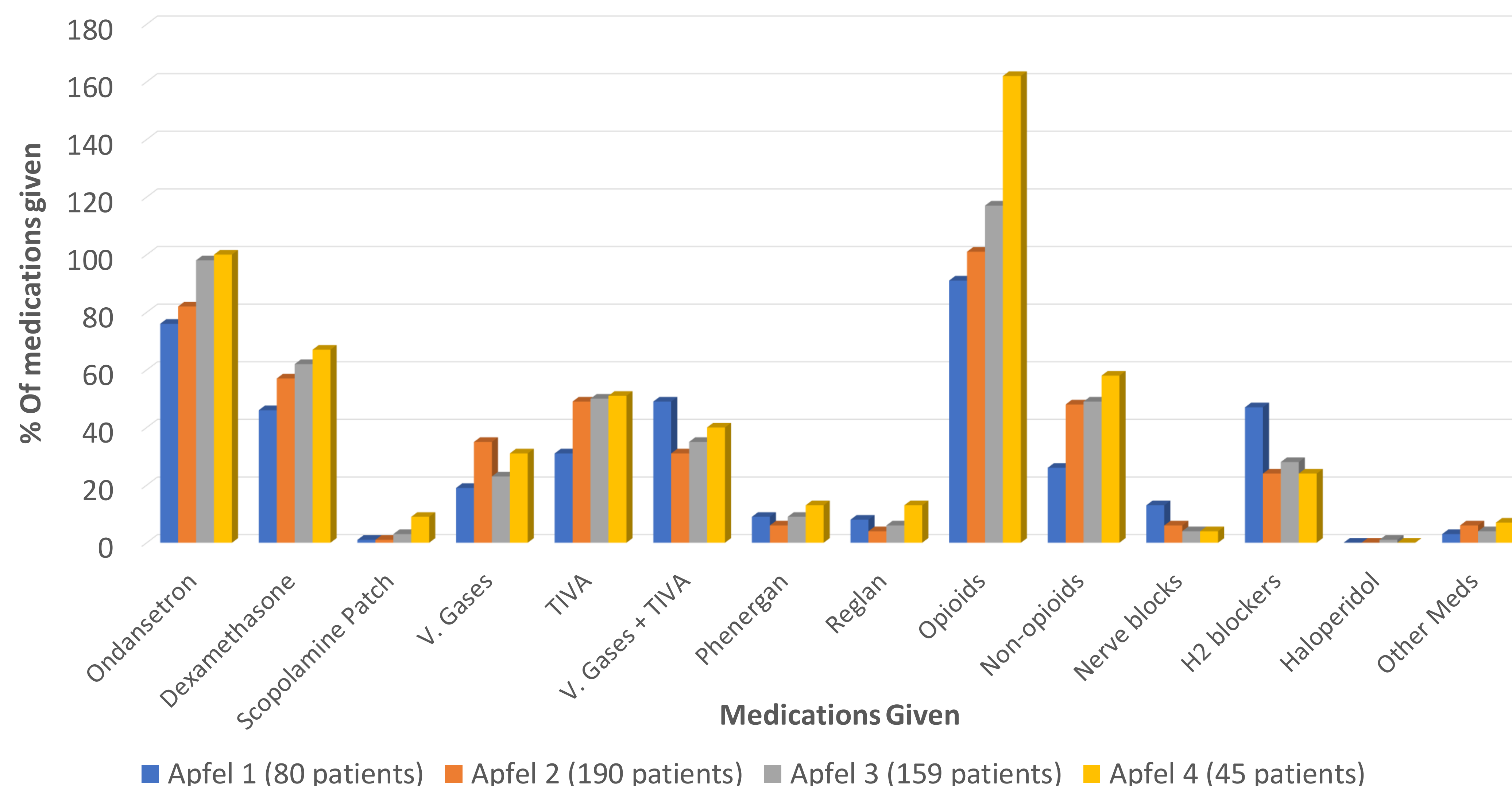


Figure 3. Percentage of Medications given to total no. of patients



Results

- There was a total of 627 patients in DSU during the period of the study but only 474 were included because of incomplete information on the forms.
- Out of 474 patients, 28% or 116 experienced PONV.
- Most of the patients had Apfel scores of 2 & 3 which has been considered moderate and high-risk for developing PONV.
- Figure 2 showed that the PONV rate rose from 18% to 49% as Apfel scores went up.
- Use of PONV prophylaxis medications like Zofran and dexamethasone had gone up with increasing Apfel Scores.
- There's an increased utilization of opioids in patients with Apfel scores of 3 and 4.
- Use of total intravenous anesthesia (TIVA) was pretty much constant at 50% on Apfels 2,3 & 4.

Discussion/ Implications

- The data gathered supported the effectiveness of Apfel SRS as a risk assessment tool in predicting PONV.
- Awareness of patient's Apfel SRS can guide the whole perianesthesia team in decreasing incidence of PONV
- Nurses are in a position to help lower the incidence of PONV and increase patient satisfaction.
- Addition of APFEL SRS in computer charting will help the perianesthesia team become aware of patient's risk for PONV
- Nurses can advocate for the incorporation of multimodal preventive PONV strategies by using APFEL SRS as a guide to anesthesia doctors.
- More education to perianesthesia nurses on medications/non-pharmacological practices that are evidence-based in reducing experience of PONV in patients.

References

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