

### PONV GOALS:

1. Identify and risk stratify pts.
2. Minimize risk exposure
3. Provide proper prophylaxis and treatment for PONV.

#### Identify those at high risk for PONV:

##### Guideline #1

1. female gender
  2. (+) history of PONV and/or motion sickness
  3. non-smokers
  4. Use of post-op opioid
- OTHERS:**
5. < 50 years of age
  6. laparoscopy
  7. middle ear surgery, strabismus, GYN surgery (emetogenic surgery)
  8. length of time without oral fluid intake (length of NPO and surgery)

##### Minimizing baseline risk: Guideline #2

1. opioid exposure (multimodal analgesia)
2. exposure to volatile anesthetics (propofol gtt)
3. anesthetic duration
4. PONV prophylaxis
5. GDFT or ZB fluid therapy (cheap)
6. Consideration of medical risk of vomiting.
7. Consider medical risk of drug exposure for those at low risk.

##### Factors affecting baseline risk:

1. Propofol gtt decreases risk by 25%, good for early PONV (6 hrs post op). NNT=5
2. Volatile anesthetics cause early PONV (0-2hrs) in PACU but not in delayed PONV (2-24 hrs)
3. General v. Regional = 9X greater risk of PONV
4. Use of NSAIDS shown not to increase the risk of bleeding after tonsillectomy/adenoidectomy
5. ~1/3 of pts receiving opioids post-op will experience PONV

##### For factors 1-4, each carries a risk score of 1 point.)

- 0 points = 10% risk
- 1 point = 20 % risk
- 2 points = 40 % risk
- 3 points = 60% risk
- 4 points= 80% risk

by Apfel Anesthesiology 1999. (sensitivity/specificity of 65-70%)

##### Administer PONV prophylaxis using 1-2 interventions for those at < moderate risk:

##### Guideline #3

overall cost of episode of N or V = ~\$22 (Eberhart, 2014)

##### RISK REDUCTION:

~20-25% per drug used. (Apfel, NEJM 2004)  
40-45% reduction for two or more drugs  
60% for three drugs

##### Administer combination therapy (> 2) interventions (multimodal PONV therapy) in patients at HIGH risk. Guideline #4

1. Target different receptors
2. Target different baseline risks
3. Consider overall risks, benefits and costs for each intervention used and missed.

## Example of Prophylaxis and Treatment of PONV\*

Risk Score	PONV RISK	Prophylaxis: No of Anti-emetics	EXAMPLES*
0	9%	0-1	± 1 TREATMENT/WAIT AND SEE
1	20%	1	1 TREATMENT
2	39%	2	Ondansetron 4 mg & Dexamethasone 4mg ± OTHER
3	60%	3	Ondansetron 4 mg & Dexamethasone 4 mg + OTHER
4	78%	4	Ondansetron 4 mg & Dexamethasone 4 mg +2 OTHER

1. TREAT WITH MODALITY NOT USED BEFORE
2. CONSIDER MEASURES TO LOWER OVERALL RISK

\*Adapted from Consensus Guidelines for PONV management by Gan et.al, 2014