Henry Ford West Bloomfield Hospital

Best Practice Advisory

- Release of 3 BPAs in EPIC for PONV reminders
- Released in May 2022
- BPA 1 is for patients with 0-2 risk factors
- BPA 2 for patients with 3 or more risks
- BPA 3 is for cesarean sections

BPA- Patients with 1-2 Risk factors for PONV

① PONV-05. Patient has at least 1 to 2 risk factors for PONV. Admin 2 prophylactic antiemetics.

Administer at 2 least antiemetics of different classes.

PONV Risk Factors

Non-smoker Intended opioid administration

Criteria that do not apply:

Female patient

History of PONV

History of motion sickness

Procedure is a risk factor for PONV

Inhalational Agent greater than 1 hour

Patient age less than 50

Antiemetics Administered (last 72 hours)

None

- ₹ Administer antiemetics
- Document exclusion to PONV BPA
- ₹ Link to MPOG/Aspire PONV-05 measure

Acknowledge Reason ...

Will admin appropriate antiemetics (remo...

BPA- Patients with 3 or more Risk factors for PONV

Important (1)

① PONV-05. Patient has at least 3 risk factors for PONV. Admin 3 prophylactic antiemetics.

Administer at 3 least antiemetics of different classes.

Patient PONV risks (per ASPIRE PONV-05 quality measure): Total Score: 3

Non-smoker Intended opioid administration Inhalational Agent greater than 1 hour

Criteria that do not apply:

Female patient History of PONV

History of motion sickness

Procedure is a risk factor for PONV

Patient age less than 50

Antiemetics Administered (last 72 hours) Showing orders from other encounters

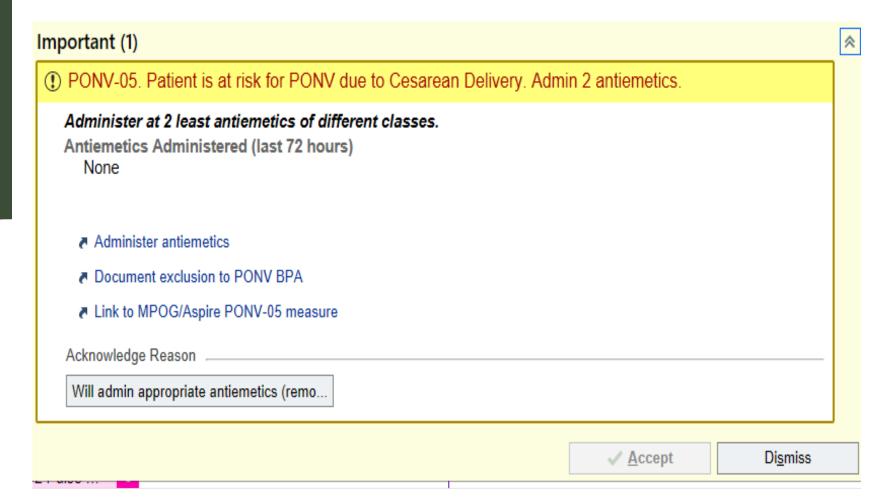
Date/Time	Action	Medication	Dose
06/30/23 1028	Given	proCHLORPERazine Edisylate	5 mg
		(COMPAZINE) injection 5 mg	ū
06/30/23 0949	Given	diphenhydrAMINE (BENADRYL) 50 mg/mL	10 mg
		injection	_

- Administer antiemetics
- Document exclusion to PONV BPA
- Link to MPOG/Aspire PONV-05 measure

Acknowledge Reason ...

Will admin appropriate antiemetics (remo...

BPA- Cesarean Sections for PONV



PONV Education

PONV Risk Factors	Give Preop or Intraop	
0-2 Risk Factors	Give 2 Antiemetics from different classes	
3 or >	Give 3 or more antiemetics from different classes	

Risk Factors include:				
Female	Age <50			
History of PONV	Use of inhalation agent >1 hr			
History of motion sickness	Laparoscopic surgery			
Non Smoker	GYN surgery			
Use of opioids intraop				

HFHS ADULT Antier	metics Prophylaxis			
Anticholinergics				
Scopolamine Patch	1.5 mg transdermal behind ear	\$21.30		
Antihistamines				
Meclizine	25 PO	\$0.32		
Dimenhydrinate	50 mg PO	\$0.15		
Neurokinin-1 Receptor Agonists				
Aprepitant	40 gm PO (3hrs prior to induction)	\$87.95		
Steroids				
Dexamethasone	4 mg IV	\$2.63		
Class: 5-Hydroxytryptamine (5-HT3) Receptor Antagonists				
Ondansetron	4 mg IV	\$0.33		
Class: 5-Hydroxytryptamine (5-HT3) Receptor Antagonists				
Ondansetron	4 mg IV	\$0.33		
Butyrophenones				
Haloperidol	0.5 mg IV	\$0.06		
Phenothiazines				
Prochlorperazine	5 mg IV	\$1.84		
Antihistamines				
Diphenhydramine	12.5 mg IV	\$0.14		
Steroids				
Dexamethasone	4 mg IV	\$2.63		
Prokinetic				
Metoclopramide	20 mg IV	\$1.70		
Phenothiazines				
Promethazine	6.25 mg PO	\$0.08		
	Scopolamine Patch Meclizine Dimenhydrinate Ne Aprepitant Dexamethasone Class: 5-Hydro Ondansetron Class: 5-Hydro Ondansetron Haloperidol Prochlorperazine Diphenhydramine Dexamethasone Metoclopramide	Scopolamine Patch Antihistamines Meclizine Dimenhydrinate Neurokinin-1 Receptor Agonists Aprepitant Antihistamines Aprepitant Au gm PO (3hrs prior to induction) Steroids Dexamethasone 4 mg IV Class: 5-Hydroxytryptamine (5-HT3) Receptor Antagonists Ondansetron 4 mg IV Class: 5-Hydroxytryptamine (5-HT3) Receptor Antagonists Ondansetron 4 mg IV Class: 5-Hydroxytryptamine (5-HT3) Receptor Antagonists Ondansetron 4 mg IV Phenothiazines Prochlorperazine 5 mg IV Antihistamines Diphenhydramine 12.5 mg IV Steroids Dexamethasone 4 mg IV Prokinetic Metoclopramide 20 mg IV Phenothiazines		

Try to avoid patient having PONV in recovery up to 6 hours after surgery

Educational page 1 of 2-page Flyer

MPOG/ASPIRE PONV PRACTICE

Risk Factors of PONV:

- o Female gender
- <50 years old</p>
- Non-smoker
- o Surgery type: GYN, laparoscopy, cholecystectomy
- o History of PONV/ motion sickness

Ways to Reduce PONV Risk:

- o Avoid GA, use regional when possible (A1)
- Use Propofol for induction, maintenance (A1): For TIVA, still consider using additional antiemetic agents
- Avoid VA (A2)
- o Avoid N2O use for >1hr (A1)
- Minimize opioid use (A1): Evidence suggests prophylactic IV Acetaminophen,
 Alpha-2 Agonists, COX2 inhibitors and NSAIDs
- Adequate hydration (A1) 10-30mL/kg

PONV Goals:

- o Administration of 2+ prophylactic antiemetics of different classes if 1-2 risk factors
- o Administration of 3+ prophylactic antiemetics of different classes if 3+ risk factors
- o Ideally, consider giving 3+ antiemetics for all patients having general anesthesia!

Who is this for?:

- o ≥18 years old
- Receiving general anesthesia
- o ≥1 risk factor for PONV
- When should antiemetics be given? Preop to intra-op

Based on the Fourth Consensus Guidelines for the Management of PONV

Educational page 2 of 2-page Flyer

Preoperative

Anticholinergic

Scopalamine patch \$13

- •1.5 mg transdermal
- •Place behind ear 2 hrs prior to induction
- Caution in elderly
- ·Antichoilinergic symptoms: confusion, mydriasis, dry mouth, urinary retention, shaking, tachycardia, flushed skin

Antihistamine

- •Meclizine \$0.32
- •25 mg, 50 mg PO Dimenhydrinate \$9
- •50 mg, 100 mg PO
- Neurokinin-1 Receptor Agonist

Aprepitant \$42

- •40 mg, 80 mg, 125 mg PO
- •3 hrs prior to induction
- Use additional birth control for 1 month
- Caution with pimozide
- Inhibit CYP3A4: increase drug levels of midazolam,

Induction

Steroids

- Dexamethasone \$1
- •4-10 mg IV
- Caution brittle diabetics



Throughout Case

TIVA

- Propofol infusion \$3.50
- •100mcg/kg/hr @ 100kg x 2hrs

Antihistamines

- •Diphenhydramine \$0.60
- •12.5-50 mg IV

Butyrophenones

- Haloperidol \$1.47 •1 mg IV
- · Avoid with MAOi, TCA, Parkinsons, Restless leg syndrome
- Caution pts with QTc prolongation, arrythmias
- Safe for pts with/without psych hx

End of Case

- 5-Hydroxytryptamine (5-HT3) Receptor Antagonist
- Ondansetron "Gold Standard" \$0.46
- •4 mg IV
- •QTc prolongation > 16 mg

Droperidol \$6

- •0.625-1.25 mg IV
- Transient QTc prolongation

STOP! Consider giving at least 3 antiemetics by end of case to avoid PONV

PACU

5-Hydroxytryptamine (5-HT3) Receptor Antagonist

- Ondansetron \$0.46
- •4 mg IV

- Phenothiazines •Prochlorperazine \$4
- •5-10 mg IV

Antihistamines

- •Diphenhydramine \$0.14
- •12.5-50 mg IV, PO

Butyrophenones

Haloperidol \$0.06

Trimethobenzamide (Tigan) \$40

•0.5-1 mg IV



Additional Antiemetics

Prokinetic •20mg, 50mg IV

Metoclopramide \$0.85

Phenothiazines

•Promethazine \$0.09 •6.25mg PO

•100mg/ml 2ml

How We Educate

EPIC change newsletter with BPAs listed

Monthly System Newsletter with PONV as focus

Educational flyer distribution

Provider Meeting reminders and education

Future Process Improvement

- Standardizing anesthesia medication carts across the system
- Include several antiemetic medications in the updated drawer layout
- We have added Haldol which currently has to be retrieved from the Pyxis