NOTE: Consider Clinical Trials as treatment options for eligible patients.

### PATIENT PRESENTATION

**Patient scheduled for surgery**

- **Assess patient for Risk Factors**
  - No Risk Factors from the categories listed below
  - 1 Risk Factor from any of the categories listed below
  - 2 or more Risk Factors from any of the categories listed below

### PROPHYLAXIS

**No Risk Factors** (see Appendix A for antiemetic choices)

- **No more than 1 drug prophylaxis**
- **At least one drug prophylaxis** (see Appendix A for antiemetic choices)
- **At least two drug prophylaxis** (see Appendix A for antiemetic choices)

**Patient sent to PACU after surgery** (see Page 2)

---

1 MDACC Risk Factors

- **Patient specific risk factors:**
  - Female gender
  - Nonsmoking status
  - History of postoperative nausea/vomiting (PONV) or motion sickness
  - Age less than 50 years

- **Anesthetic risk factors:**
  - Use of volatile anesthetics
  - Postoperative opioids

- **Surgical risk factors:**
  - Duration of anesthesia greater than 3 hours.
  - Type of surgery (abdominal, gynecologic, breast, head & neck surgery)
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**TREATMENT**

Patient in PACU after surgery

- Assess pre and intraoperative antiemetic treatment
  - Prophylaxis received
    - No prophylaxis
      - Refer to Appendix B for treatment options
  - No prophylaxis
    - Refer to Appendix B for treatment options

Patient experiences post-operative nausea/vomiting in PACU?

- Yes
  - Refer to patient’s post-op orders and discharge as indicated
- No
  - Nausea/vomiting resolved with additional treatment?
    - Yes
      - Notify Anesthesiology
    - No
      - Patient will be managed per Surgeon’s post-op orders

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APPENDIX A: Antiemetic Medications Options for Prophylaxis or Intraoperative Use

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5HT-3 Antagonists</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ondansetron (Zofran®)</td>
<td>4 mg IV</td>
<td>Give at the end of surgery; Risk of QTc prolongation increases with increasing dose</td>
</tr>
<tr>
<td>Granisetron</td>
<td>0.35 - 3 mg IV</td>
<td>Give at end of surgery; For patients with history of delayed (post-discharge) post-operative nausea and vomiting</td>
</tr>
<tr>
<td><strong>Anticholinergics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scopolamine Patch (Transderm Scop®)</td>
<td>1.5 mg disc placed behind ear at least 2-4 hours before surgery</td>
<td>Caution in patients greater than 60 years old; Patch may be applied the night prior to surgery</td>
</tr>
<tr>
<td><strong>Butyrophenones</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Droperidol (Inapsine®)</td>
<td>0.625 mg IV</td>
<td>Most effective if given at the end of surgery; Requires 2-3 hours of EKG monitoring; Avoid in patients with prolonged QTc interval</td>
</tr>
<tr>
<td>Haloperidol (Haldol®)</td>
<td>1 mg IV</td>
<td>Risk of QTc prolongation precludes its use as a first-line agent; Alternative to droperidol</td>
</tr>
<tr>
<td><strong>Corticosteroids</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>4 mg IV</td>
<td>Give shortly after induction; Avoid in labile diabetic patients</td>
</tr>
<tr>
<td><strong>Neurokinin Antagonists</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aprepitant</td>
<td>40 mg PO</td>
<td>Give within 3 hours before the induction of anesthesia</td>
</tr>
<tr>
<td><strong>Phenothiazines</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promethazine (Phenergan®)</td>
<td>6.25 mg IV</td>
<td>Give shortly after induction; 6.25 - mg dose may require a second dose after 15 minutes; may require up to 3 times for a maximum dose of 25 mg; Should not be used in children less than or equal to 2 years old</td>
</tr>
<tr>
<td>Prochlorperazine (Compazine®)</td>
<td>5 - 10 mg IV</td>
<td>Give at the end of surgery</td>
</tr>
</tbody>
</table>

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### APPENDIX B: Antiemetic medications options for TREATMENT OR RESCUE

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>5HT-3 Antagonists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ondansetron (Zofran®)</td>
<td>First Line Agent 2 mg IV</td>
<td>Risk of QTc prolongation increases with increasing dose</td>
</tr>
<tr>
<td>Phenothiazines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promethazine (Phenergan®)</td>
<td>Second Line Agents 6.25 mg IV</td>
<td>6.25 mg dose may require a second dose after 15 minutes; may repeat up to 3 times for a maximum dose of 25 mg</td>
</tr>
<tr>
<td>Prochlorperazine (Compazine®)</td>
<td>5 - 10 mg IV</td>
<td>Requires 2-3 hours of EKG monitoring</td>
</tr>
<tr>
<td>Butyrophenones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Droperidol (Inapsine®)</td>
<td>Third Line Agents 0.625 mg IV</td>
<td>Requires 2-3 hours of EKG monitoring</td>
</tr>
<tr>
<td>Haloperidol (Haldol®)</td>
<td>1 mg IV</td>
<td>Risk of QTc prolongation precludes its use as a first-line agent</td>
</tr>
<tr>
<td>Prokinetic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metoclopramide</td>
<td>Rescue 10 mg IV</td>
<td>Alternative to droperidol</td>
</tr>
</tbody>
</table>

**NOTES:**

When nausea and vomiting occur postoperatively, treatment should be administered with an antiemetic from a DIFFERENT pharmacologic class than the drug given for prophylaxis initially.

Re-dosing should only occur if greater than or equal to 6 hours has elapsed since the last dose from that class was given.
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SUGGESTED READINGS


Eberhart LH, Morin AM. (2011). Risk scores for predicting postoperative nausea and vomiting are clinically useful tools and should be used in every patient: con--'life is really simple, but we insist on making it complicated'. Eur J Anaesthesiol; 28:155-9.


Pierre S. (2011). Risk scores for predicting postoperative nausea and vomiting are clinically useful tools and should be used in every patient: pro--'don't throw the baby out with the bathwater'. Eur J Anaesthesiol; 28:160-3.


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DEVELOPMENT CREDITS

This practice consensus algorithm is based on majority expert opinion of the Nausea and Vomiting work group at the University of Texas MD Anderson Cancer Center using a multidisciplinary approach that included input from the following healthcare providers:

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