



Guidelines for the Management of

# **Nausea and Vomiting in Cancer Patients**

# Guidelines for the Management of Nausea and Vomiting in Cancer Patients



Management of chemotherapy-induced nausea and vomiting includes treatment strategies for both acute (within 24 hours of chemotherapy administration) and delayed (>24 hours after chemotherapy) emesis.

To plan the initial antiemetic treatment for adult cancer patients, the clinician should assess the chemotherapy regimen to be given (Assessment tools- Page 2). Based on the chemotherapy agent with the highest potential to cause nausea and vomiting (emetogenic potential), appropriate antiemetic agents are selected to manage the acute emesis and delayed emesis (see Page 4 for Adults or Page 6 for Pediatric Patients). These are prescribed along with the chemotherapy. Some new agents pending approval in Canada, with superior antiemetic management outcomes, are included in the options for consideration.

Some agents may be ordered as take-home prescriptions, for dispensing by the patient's community pharmacy. Clinicians must keep in mind the costs of these prescription medications and the patient's ability to pay for these drugs (including co-payments of prescription insurance and uninsured patients.)

With each cycle of chemotherapy, nausea and vomiting are assessed, using the Common Toxicity Criteria (or the Graphic Rating Scale) for screening and outcome assessment (see Page 8). Attention must focus on both the present circumstances (i.e. how the patient feels right now) and the historic experience since the last chemotherapy treatment (i.e. worst feelings or emesis after the last treatment). If a patient has experienced an unacceptable level of nausea (>2) or vomiting (>1), and this experience has not been influenced by some other causal factor, the antiemetic prevention strategy should be reconsidered, and, if necessary, altered (see Ongoing Antiemetic Treatment for adults- page 5).

Effective management of acute and delayed nausea and vomiting is crucial to prevention of anticipatory nausea and vomiting. In addition to pharmacologic antiemetic agents, other drugs (such as benzodiazepines) and non-pharmacologic methods (such as muscle relaxation, distraction or music therapy) can modify the patient experience and reduce morbidity and anxiety from nausea and vomiting experiences(s).

Cancer patients may also experience chronic nausea or vomiting not related to treatment. Careful assessment for reversible underlying causes, and a simple regimen of gastric promotility agents are reasonable steps to deal with this common problem. A step-wise approach is outlined on page 8.

Practice guidelines are intended to assist health care professionals with decisions throughout the spectrum of the cancer experience. Guidelines should never replace specific decisions for individual patients, and do not substitute for the shared decisions between any patient and doctor (or other health professional) which are unique to each circumstance. However, guidelines do provide evidence-based background information, consensus-based recommendations for similar problems, and a context for each individual decision. A full-text version of this guideline is also available. Both versions of this guideline will be revised, from time to time, as new evidence becomes available. Current versions of this guideline are available on the Cancer Care Nova Scotia website ([www.cancercare.ns.ca](http://www.cancercare.ns.ca)).

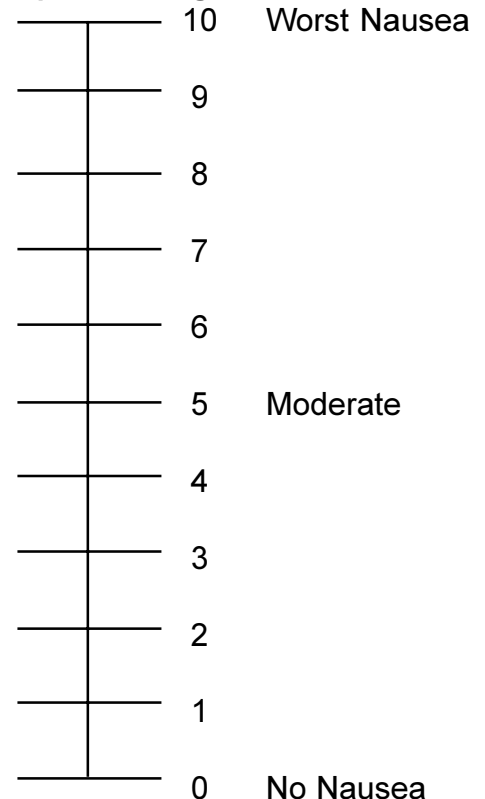
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## Assessment of Nausea and Vomiting

Assessment Recommendations for Nausea and Vomiting	
	Assessment Recommendations
Chemotherapy treatment phase	<ul style="list-style-type: none"> <li>• CTC at each treatment visit, or weekly for continuous treatment; include subjective comments on patient experience</li> <li>• Inpatients: assess with CTC before each chemotherapy administration or daily for continuous treatment; repeat CTC 24 hours after treatment and continue q24h for delayed or chronic N&amp;V                             <ul style="list-style-type: none"> <li>• If symptomatic, assess q4h until symptoms resolve</li> </ul> </li> </ul>
Radiotherapy treatment phase	<ul style="list-style-type: none"> <li>• CTC weekly or at review clinic visit</li> </ul>
Follow-up after active treatment phase	<ul style="list-style-type: none"> <li>• CTC at scheduled follow-up visits immediately after active treatment phase, if nausea or vomiting were problematic during active treatment; follow until symptoms resolved</li> </ul>
Symptom of cancer (usually advanced)	<ul style="list-style-type: none"> <li>• CTC at each visit if symptomatic with nausea or vomiting; may assess and follow as required by severity of symptoms</li> <li>• Detailed physical history and physical examination at start and repeated at each visit                             <ul style="list-style-type: none"> <li>• If patient admitted to hospital, assess with CTC daily until symptoms resolved</li> <li>• If patient cannot use CTC, consider using Graphic Rating Scale</li> </ul> </li> </ul>

Common Toxicity Criteria (CTC)	
Grade	Nausea
0	none
1	loss of appetite without alteration in eating habits
2	oral intake decreased without significant weight loss, dehydration or malnutrition; IV fluids indicated <24 hrs
3	inadequate oral caloric or fluid intake; IV fluids, tube feedings, or TPN indicated ≥ 24 hrs
4	Life-threatening consequences
Vomiting	
0	none
1	1 episode in 24 hours; IV fluids indicated <24 hrs
2	2-5 episodes in 24 hours
3	≥6 episodes in 24 hours; IV fluids, or TPN indicated ≥ 24 hrs
4	Life-threatening consequences

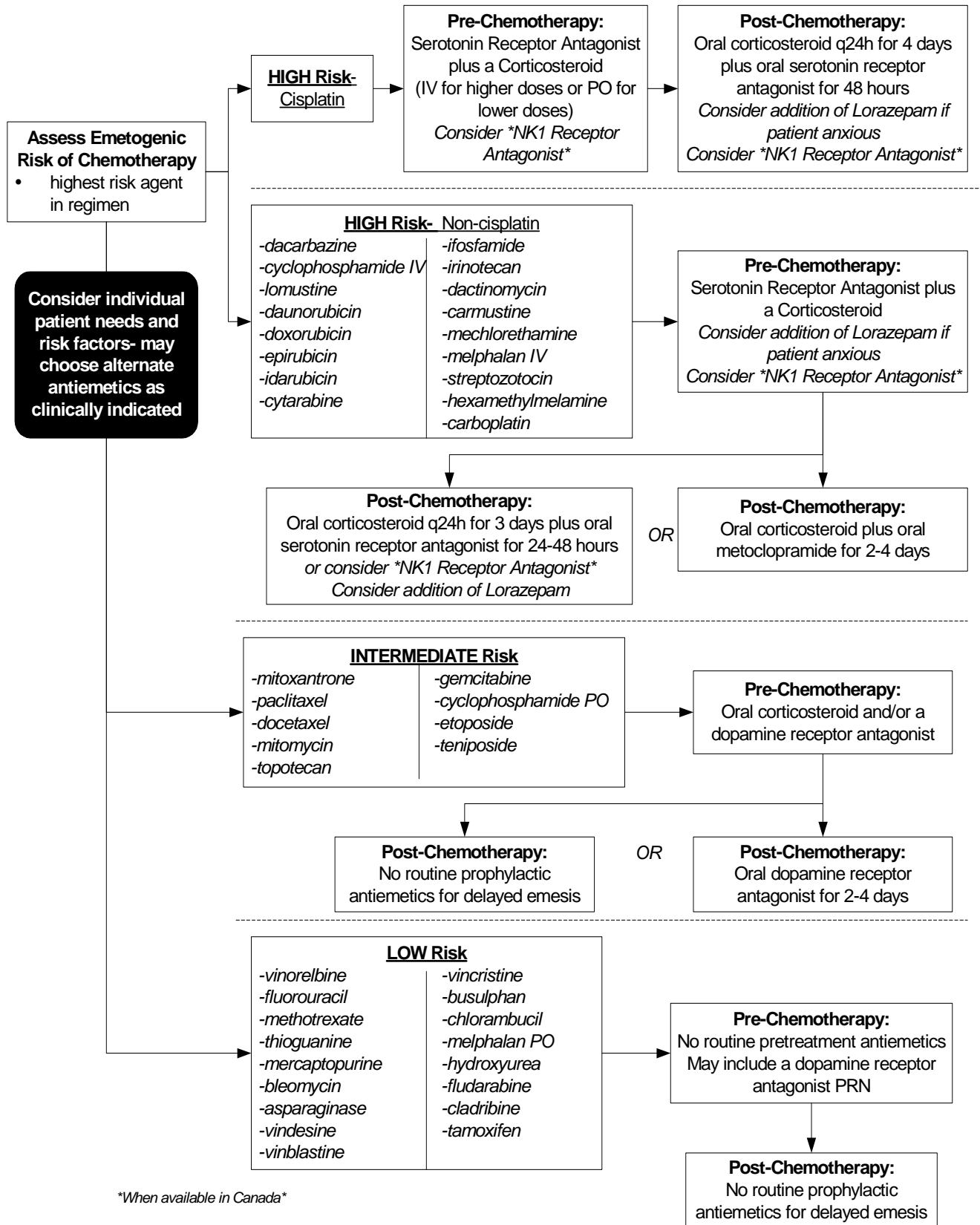
### Graphic Rating Scale for Nausea



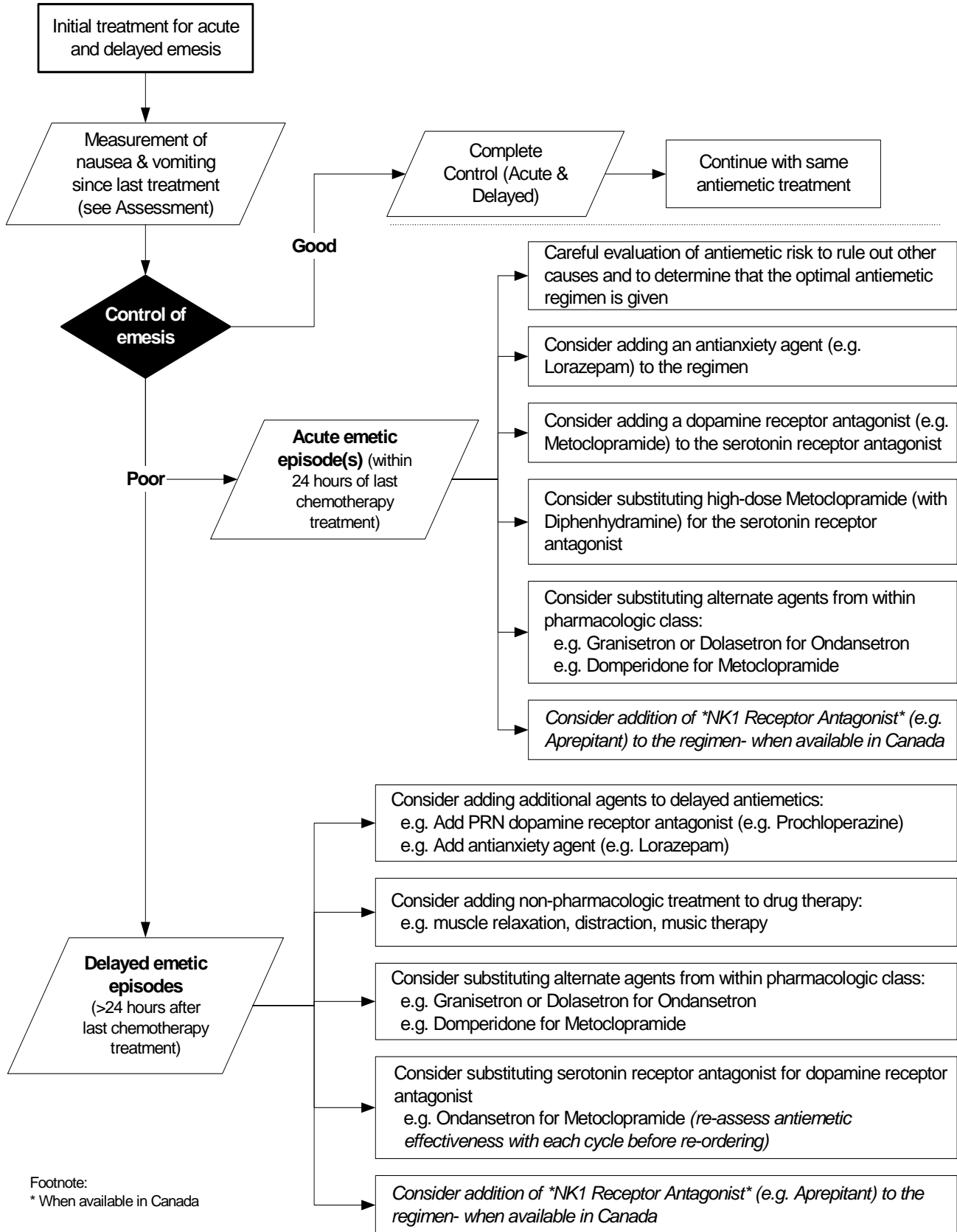
# Antiemetic Agents for Management of Treatment-Induced Nausea and Vomiting

Pre-Chemotherapy Drugs & Doses- High-Risk Chemotherapy	Post-Chemotherapy Drugs & Doses- High-Risk Chemotherapy
<p style="text-align: center;"><b>Serotonin (5HT<sub>3</sub>) Receptor Antagonist</b></p> <ul style="list-style-type: none"> <li>• Ondansetron (Zofran) 8 PO or 8mg IV <i>OR</i></li> <li>• Granisetron (Kytril) 2mg PO or 1mg IV <i>OR</i></li> <li>• Dolasetron (Anzemet) 100-200mg PO or 100mg IV <i>PLUS</i></li> </ul> <p style="text-align: center;"><b>Corticosteroid</b></p> <ul style="list-style-type: none"> <li>• Dexamethasone (Decadron) 8-20mg PO or IV <i>(Higher doses for highly emetogenic chemo)</i> All doses given 15-30 minutes prior to chemotherapy</li> </ul>	<p style="text-align: center;"><b>Corticosteroid</b></p> <ul style="list-style-type: none"> <li>• Dexamethasone 8mg PO once or twice daily for 2 to 3 days (3-4 days with cisplatin) <i>PLUS</i></li> </ul> <p><b>Serotonin Receptor Antagonist or Dopamine Receptor Antagonist</b></p> <ul style="list-style-type: none"> <li>• Ondansetron 8mg PO q12h for 3 doses</li> <li>• (Granisetron or Dolasetron effective with only pre-chemo dose, but may be given q24h for one dose) <i>OR</i></li> <li>• Metoclopramide 10-20mg PO two to four times per day for 2 to 3 days (3-4 days with cisplatin)</li> <li>• May add Diphenhydramine (Benadryl) 25-50mg PO, to prevent extrapyramidal reactions <i>OR</i></li> <li>• Prochlorperazine 10mg PO q4-6h PRN</li> </ul>
Intermediate-Risk Chemotherapy	Intermediate-Risk Chemotherapy
<p style="text-align: center;"><b>Corticosteroid</b></p> <ul style="list-style-type: none"> <li>• Dexamethasone 4-8mg PO, once before chemotherapy <i>AND/OR</i></li> </ul> <p style="text-align: center;"><b>Dopamine Receptor Antagonist</b></p> <ul style="list-style-type: none"> <li>• Metoclopramide (Maxeran) 10-20mg PO before chemotherapy <i>OR</i></li> <li>• Prochlorperazine (Stemetil) 10mg PO before chemotherapy</li> </ul>	<p style="text-align: center;"><b>Intermediate-Risk Chemotherapy</b></p> <ul style="list-style-type: none"> <li>• Prochlorperazine 10mg PO q4-6h PRN</li> <li>• Metoclopramide 10mg PO q4h PRN</li> </ul>
Other Drugs and Doses to Consider- Neurokinin-1 (NK1) Receptor Antagonist	Adjuvant Drugs and Doses
<p>Aprepitant (Emend) 125mg PO pre-chemo Aprepitant (Emend) 80mg PO once daily on Days 2 &amp; 3 Notes:</p> <ul style="list-style-type: none"> <li>• Not currently available in Canada</li> <li>• If NK1 Receptor antagonist given, Serotonin RA or Dopamine RA would not be needed for delayed emesis prevention</li> </ul>	<p><i>(May add to other antiemetic regimens)</i></p> <ul style="list-style-type: none"> <li>• Lorazepam (Ativan) 1-2mg PO or SL before chemotherapy</li> <li>• Dronabinol (Marinol) 2.5-10mg q4-12h <i>OR</i> Nabilone (Cesamet) 1-2mg PO BID- for selected patients only</li> </ul>

# Initial Antiemetic Treatment for Adult Chemotherapy Patients



# Ongoing Antiemetic Treatment for Adult Chemotherapy Patients



# Management of Nausea & Vomiting - Pediatric Cancer Patients

**VERY HIGH Rank: 4**  
 carmustine >250 mg/m<sup>2</sup>  
 cisplatin ≥ 50 mg/m<sup>2</sup> \*  
 cyclophosphamide > 1500 mg/m<sup>2</sup> \*  
 dacarbazine  
 mechlorethamine

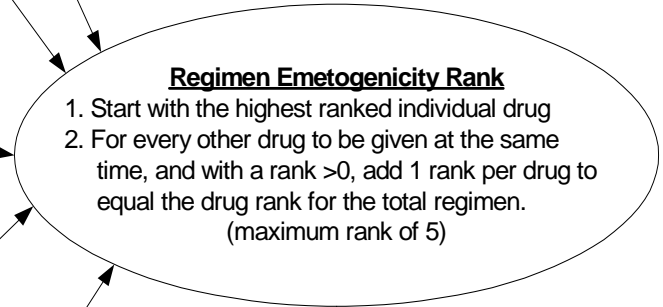
**HIGH Rank: 3**  
 carboplatin \*  
 carmustine ≤ 250 mg/m<sup>2</sup>  
 cisplatin < 50 mg/m<sup>2</sup> \*  
 cyclophosphamide \*  
 > 750 mg/m<sup>2</sup> and ≤ 1500 mg/m<sup>2</sup>  
 cytarabine > 1000 mg/m<sup>2</sup>  
 dactinomycin  
 daunorubicin > 60 mg/m<sup>2</sup>  
 doxorubicin > 60 mg/m<sup>2</sup>  
 methotrexate > 1000 mg/m<sup>2</sup>

**MODERATE Rank: 2**  
 cyclophosphamide ≤ 750 mg/m<sup>2</sup> \*  
 daunorubicin ≤ 60 mg/m<sup>2</sup>  
 doxorubicin ≤ 60 mg/m<sup>2</sup>  
 epirubicin ≤ 90 mg/m<sup>2</sup>  
 etoposide ≥ 60 mg/m<sup>2</sup>  
 idarubicin  
 ifosfamide  
 methotrexate = 250-1000 mg/m<sup>2</sup>  
 mitoxantrone < 15 mg/m<sup>2</sup>  
*Radiotherapy to abdomen, mantle, cranium, cranial spine*

**MILD Rank: 1**  
 etoposide < 60 mg/m<sup>2</sup>  
 methotrexate 51-249 mg/m<sup>2</sup>  
 procarbazine  
 teniposide

**NONE Rank: 0**  
 asparaginase  
 bleomycin  
 busulfan  
 chlorambucil  
 cytarabine < 1000 mg/m<sup>2</sup>  
 hydroxyurea  
 lomustine  
 mercaptopurine  
 methotrexate ≤ 50 mg/m<sup>2</sup>  
 thioguanine  
 vinblastine  
 vincristine

Management of chemotherapy-induced nausea and vomiting in children differs from adults. Children are much more sensitive to acute dystonic reactions from dopamine receptor antagonists and are more likely to develop anticipatory nausea and vomiting. The system to rank emetogenicity of drugs and regimens includes additional gradations, to identify patients who are in greater need of higher dose antiemetics and dopamine receptor antagonists. The emetogenicity ranking of full regimens is outlined on this page, and the pediatric dosing is on the following page. Antiemetic agents for children with cancer may be given in the hospital or filled at a community pharmacy. Specific directions for antiemetic treatment will be given by the pediatric oncology program.

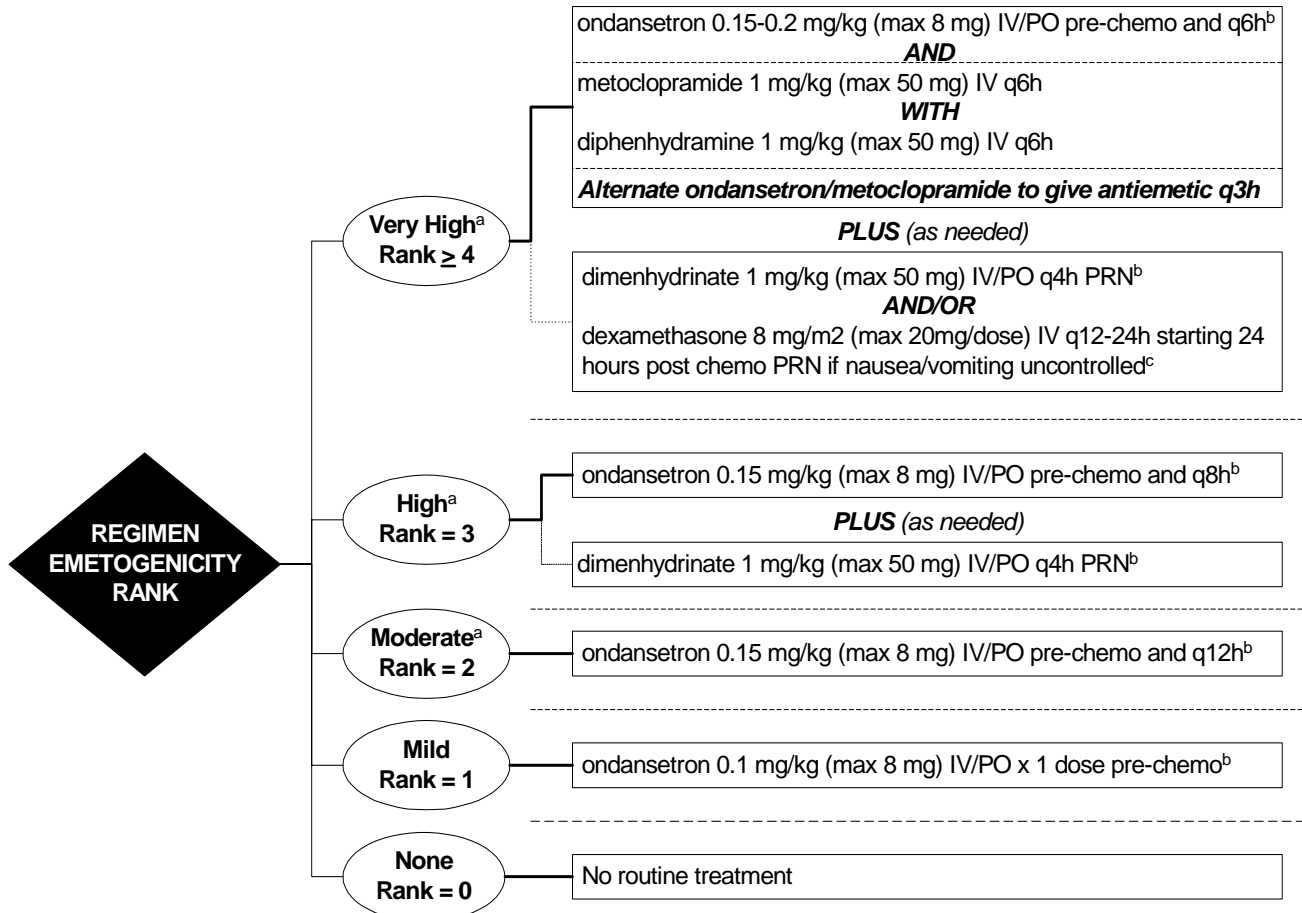


See "Antiemetic Treatment for Pediatric Cancer Patients" next page

\* may also cause delayed or prolonged nausea and vomiting



# Antiemetic Treatment for Pediatric Cancer Patients



## Anticipatory Nausea/Vomiting

lorazepam (5-10 yrs: 0.5 mg/dose; > 10 yrs: 1 mg/dose) PO/SL qHS the night before chemo and/or the morning of chemo

**AND**

modify antiemetic regimen for next cycle of chemotherapy (i.e. increase to next rank up for regimens < rank 4)

lorazepam 0.025-0.05 mg/kg/dose (max 4 mg/dose) IV/PO/SL q6h PRN

**OR**

dimenhydrinate 1 mg/kg/dose IV/PO q4h PRN<sup>b</sup>

**AND**

increase ondansetron dosing frequency (e.g. from q8h to q6h)<sup>e</sup>

**AND**

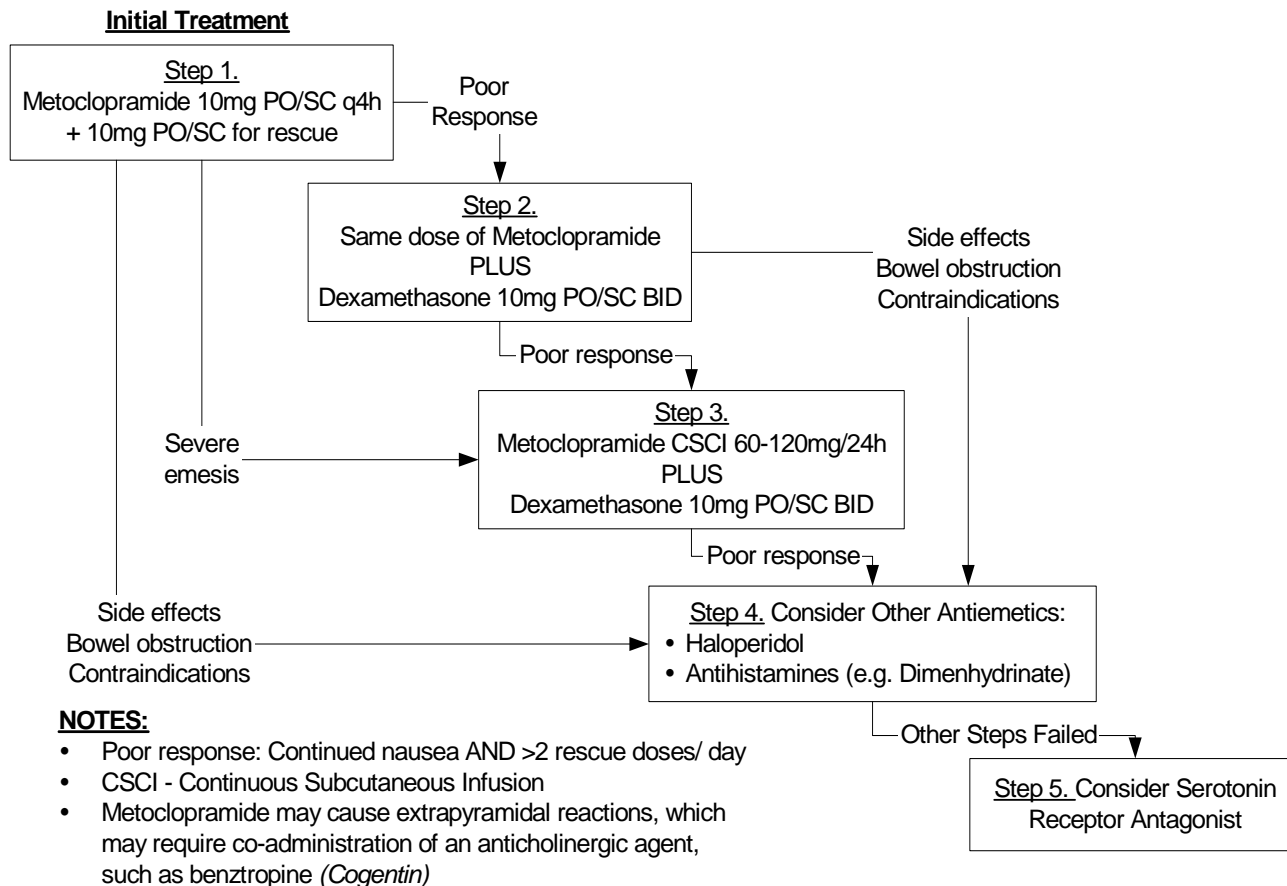
add dexamethasone, if appropriate<sup>c</sup>

**AND**

modify antiemetic regimen for next cycle of chemotherapy (i.e. increase to next rank up for regimens < rank 4)

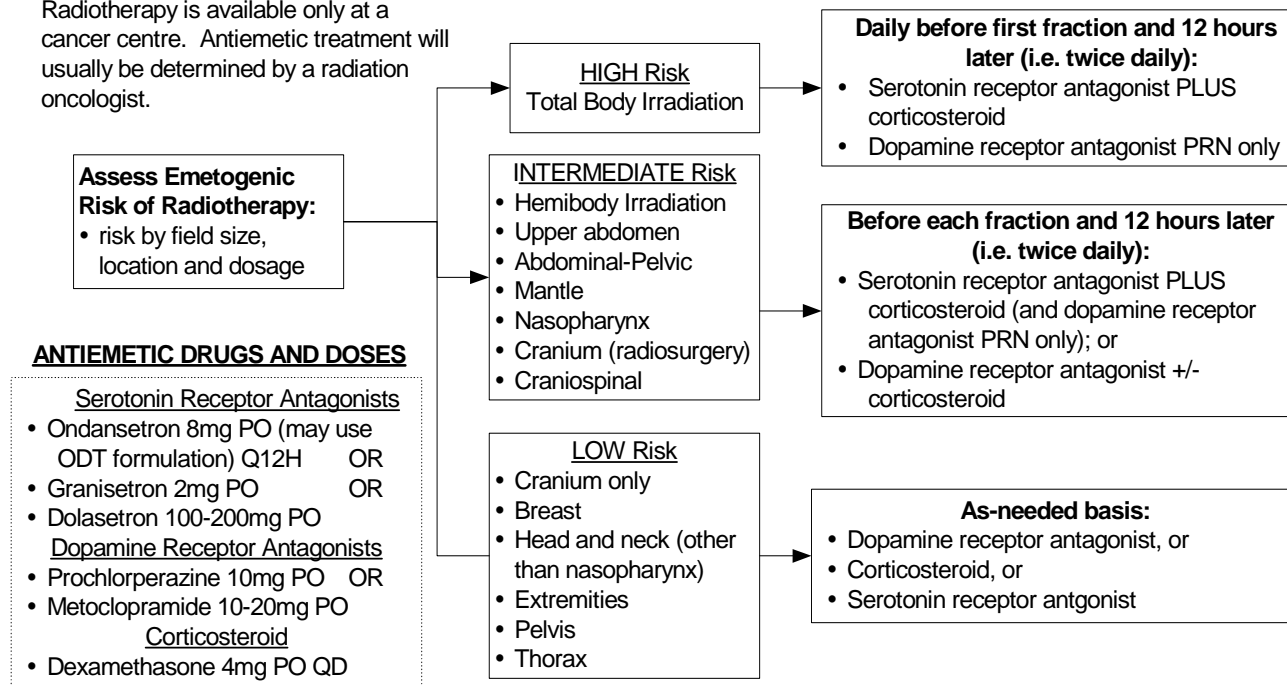
- Regular antiemetics given 'round-the-clock' for twice the number of chemotherapy days, up to a duration of +3 days after chemotherapy. PRN antiemetics may be continued beyond this time.
- Antiemetics given orally when appropriate. Oral Ondansetron rounded to nearest dose of 4mg or 8mg tablet or appropriate dose of liquid
- Dexamethasone as an antiemetic may be contraindicated in some protocols or in patients receiving treatment for brain tumours.
- Breakthrough occurs when the patient experiences > 2 vomits or retches within a 24 hour period, or experiences ≥ 3 hours of significant nausea per day, affecting the level of patient activity.
- If patient fails on 2 consecutive cycles with ondansetron, substitute granisetron for ondansetron.

## Antiemetic Treatment for Chronic Nausea



## Antiemetic Treatment for Radiotherapy Patients

Radiotherapy is available only at a cancer centre. Antiemetic treatment will usually be determined by a radiation oncologist.





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