Symptom Management Guidelines: Nausea and Vomiting

Definition(s)

Nausea: Queasy sensation and/or urge to vomit
Vomiting: The forceful expulsion of the contents of the stomach, duodenum, or jejunum through the oral cavity.

Focused Health Assessment

PHYSICAL ASSESSMENT

Vital Signs
- Frequency – as clinically indicated

Weight
- Take current weight and compare to pre – treatment or last recorded weight

Hydration Status
- Assess skin turgor, capillary refill, mucous membranes
- Amount and character of urine (Is patient urinating less than 400-500 ml per day? Is urine dark?)
- Level of consciousness?

Abdominal Assessment
- Auscultate abdomen - assess presence and quality of bowel sounds
- Assess for abdominal pain, tenderness, distention

Emesis Examination
- Inspect emesis for colour, consistency, quantity, odour and blood

Functional Status
- Activity level/ECOG or PPS

SYMPTOM ASSESSMENT

***Consider contributing factors**

Normal
- Did you have nausea/vomiting prior to your treatment?
- Are you aware of any medications that you are taking that could cause nausea and vomiting (e.g. antibiotics)

Onset
- When did the nausea and/or vomiting begin?
- How many episodes of vomiting in the last 24 hours?

Provoking / Palliating
- What brings on the nausea and/or vomiting?
- Is there anything that makes the nausea/vomiting better? Or worse?

Quality
- Describe the emesis
- Colour: (Visible blood, coffee ground, bile)
- Volume: Large Amount; (2+ cups), moderate amount (½ - 2 cups) small amount; (½ cup or less).
- Odour

Region / Radiation - NA

Severity / other Symptoms
- How bothered are you by this symptom? (On a scale of 0 – 10, with 0 being not at all and 10 being the worst imaginable)
- Have you been able to eat in the past 24 hours?
- Have you be able to tolerate fluids in the past 24 hours
- Do you have nausea with or without vomiting?
- Projectile vomiting?
- Have you had any other symptoms such as: Abdominal pain? Headache? Pain elsewhere?
- Passing gas?
- Constipation? - When was your last bowel movement? Blood/mucous in stool?
- Fever? - possible infection
- Dehydration?: Dry mouth, thirst, dizziness, weakness, dark urine?

Treatment
- What medications or treatments have you tried? Has this been effective?

Value
- What do you believe is causing your nausea?

NAUSEA AND VOMITING GRADING SCALE NCI CTCAE (Version 4.03)					
	GRADE 1 (Mild)	GRADE 2 (Moderate)	GRADE 3 (Severe)	GRADE 4 (Life Threatening)	GRADE 5
Nausea	Loss of appetite without alteration in eating habits	Oral intake decreased without significant weight loss, dehydration or malnutrition	Inadequate oral caloric or fluid intake; tube feedings, TPN or hospitalization may be indicated	–	–
Vomiting	1-2 episodes (separated by 5 minutes) in 24 hours	3-5 episodes (separated by 5 minutes) in 24 hrs	≥ 6 episodes separated by 5 minutes) in 24 hrs; tube feeding, TPN or hospitalization indicated	Life-threatening consequences; urgent intervention indicated	Death

***Step-Up Approach to Symptom Management:**
Interventions Should Be Based On Current Grade Level and Include Lower Level Grade Interventions As Appropriate

NORMAL – GRADE 1	GRADE 2 OR Nausea and Vomiting NOT resolving after 24 hours

NON – URGENT Prevention, support, teaching, & follow-up as clinically indicated	URGENT: Requires medical attention within 24 hours
Patient Care and Assessment	• Provide instructions on how to take antiemetics, including dose and schedule. • Rule out other causes of nausea and vomiting
Dietary Management	**Encourage:** • Eat small, bland meals served cool. ie rice, crackers, toast. • Sip water and other fluids -Aim for 8-10 glasses/day (coconut water, diluted juice, sports drinks, broth. Suck on ice chips, frozen fruit) • Maintain oral hygiene • Restrict fluids with meals **Nausea**: try tea/smoothie made with grated ginger root, lemon zest or mint leaves, ginger candies, flat ginger ale. **Vomiting**: Avoid solid food for 30-60 minutes after vomiting has passed. Start eating and drinking slowly in this order: 1.Clear liquids (water, ice chips, watered down juice, broth, popsicles) 2. Dry starchy food (crackers, dry toast) 3. Protein rich foods (chicken, fish, eggs) 4. Dairy foods (yogurt, milk, cheese) **Avoid:** • alcohol and tobacco • Avoid lying down after eating-sit upright 30-60 minutes NOTE: If patient unable to tolerate adequate daily fluid intake, IV hydration or hypodermoclysis to replace lost fluid and electrolytes may be required *For further Dietary Management See Oncology Nutrition Services in Resource Section*

Non-Pharmacological Management	Modify environment (control smells and noise) ● Take a walk outside or breathe in fresh air through an open window ● If anticipatory nausea, consider distraction strategies such as relaxation, music, imagery or hypnosis (referral to patient and family counselling may be helpful for these interventions) ● Consider acupressure–patient administered or acupressure bracelet. Link: https://www.mskcc.org/cancer-care/patient-education/acupressure-nausea-and-vomiting
Pharmacological Management	● Avoid or discontinue any medications that may cause or exacerbate nausea and vomiting (in consultation with physician and pharmacist) ● Refer to protocol specific algorithm if patient is on Immunotherapy ● Instruct patient to initiate or continue medications according to instructions given ● Allow 30-60 minutes post antiemetic before eating ● Antiemetic medications that may be prescribed: Ondansetron, dexamethasone, metoclopramide, prochlorperazine ● Arpetiant for highly emetogenic chemotherapy ● Haloperidol ● Nozinan ● Dimenhydrinate suppository if unable to take orally ● Lorazepam may be prescribed for anticipatory nausea For further Pharmacological Management See Cancer Management Guidelines (Health Professional) and Cancer Drug Manual in Resource Section OR THIS: Provide instructions on how to take antiemetic, including dose and schedule Any unnecessary medications contributing to nausea and vomiting should be discontinued (in consultation with physician and pharmacist) Select anti-nausea medication based on the cause of the nausea and vomiting, See **Appendix B** **Examples:** ● *High Risk Chemotherapy induced*: add Aprepitant. Cannabis for refractory ● *Opioid-induced nausea*: Metoclopramide/domperidone. May remit w tolerance after 5-7 days..Suggest narcotic rotation and route switching ● *Brain metastases:* Dexamethasone ● *Vestibular causes:* Scopolamine, Dimenhydrinate ● *Anticipatory*: Prevention best option. Lorazepam **Caution:** ● Ondansetron and Domperidone: may increase risk of arrhythmia ● Metoclopramide: monitor for neurological/extrapyramidal side effects ● Olanzapine: increased fall risk with sedation and elderly ● Dexamethasone: reflux and insomnia *For further Pharmacological Management See Cancer Management Guidelines (Health Professional) and Cancer Drug Manual in Resource Section*
Patient Education	Reinforce importance of accurately recording and reporting the following information: ● Onset and number of emesis occurrences per 24 hours ● Fluid intake per 24 hours Reinforce with patients when to seek immediate medical attention: ● Temperature greater than or equal to 38° C ● Blood (bright red or black) in emesis, coffee ground emesis ● Severe cramping, acute abdominal pain (+/- nausea & vomiting) ● Dizziness, weakness, confusion, excessive thirst, dark urine. ● Projectile vomiting. ● Nausea and vomiting not improving with recommended strategies Inform patient that isolation precautions may be required if symptoms worsen or infection suspected, patient may need to be isolated as per infection control (available to internal PHSA staff) Review contact numbers and access to resources
Follow-Up	Reassess in 24 hours, if symptoms not resolved provide further recommended strategies and repeat follow–up assessment within 24 hours. Follow up options**:** ● Instruct patient/family to call back

	• Arrange for nurse initiated telephone follow–up or physician follow-up

GRADE 3 - GRADE 4

EMERGENT:
Requires IMMEDIATE medical attention

Patient Assessment	• Patients with Grade 3 or 4 nausea and vomiting generally require admission to hospital – notify physician of assessment, facilitate arrangements as necessary • If patient is on Immunotherapy, remind them to present their Immunotherapy alert card. • Consult with physician • To rule out other causes or concomitant causes of nausea and vomiting • To hold chemotherapy until symptoms resolved • Lab tests that may be ordered: Complete blood count (CBC), electrolyte profile • Nursing Support • Monitor vital signs (as clinically indicated) • Physical assessment • Accurate intake and output record, include daily weight • Pain and symptom assessment and management as appropriate
Dietary Management	• IV hydration to replace lost fluids and electrolytes • Enteral or parenteral nutrition (TPN) may be indicated for some patients *For further Dietary Management See Oncology Nutrition Services in Resource Section*
Pharmacological Management	• Avoid/discontinue any medications that may cause or exacerbate nausea and vomiting (in consultation with physician and pharmacist) • Medications that may be prescribed intravenously: – Ondansetron (Zofran) – Metoclopramide – Prochlorperazine (Stemetil) – Haloperidol – Nozinan – Dexamethasone • Refer to protocol specific algorithm if patient is on Immunotherapy *For further Pharmacological Management See Cancer Management Guidelines (Health Professional) and Cancer Drug Manual in Resource Section*
Patient Education	• Provide support, reinforce to patients/family that nausea and vomiting can be effectively managed with prompt intervention • Continue to reinforce self care, review medications, lab /diagnostic testing with patients/family as appropriate • Discharge teaching as early as possible with patient/family

RESOURCES & REFERRALS

Referrals	• Oncology Nutrition Services • Home Health Nursing • Patient Support Centre • Telephone Care for follow-up • Pain and Symptom Management/Palliative Care (PSMPC)
Health Professional Resources	• SCNAUSEA – Guidelines for preventing and treatment of Chemotherapy-Induced Nausea and Vomiting in Adults
Immunotherapy	• Immunotherapy Alert Card • Please refer to protocol specific algorithms to guide management of immune mediated side

	effects.
Patient Education Resources	• Nausea & Vomiting handout • Practical tips to help manage nausea handout • Nutritional Guidelines for Anorexia handout • Increasing Fluid Intake handout • Resources about managing anxiety, progressive muscle relaxation, positive thinking, etc http://www.bccancer.bc.ca/health-info/coping-with-cancer/emotional-support/resources
BC Inter-professional palliative symptom management guideline	• https://www.bc-cpc.ca/cpc/symptom-management-guidelines/
Bibliography List	• http://www.bccancer.bc.ca/health-professionals/clinical-resources/nursing/symptom-management

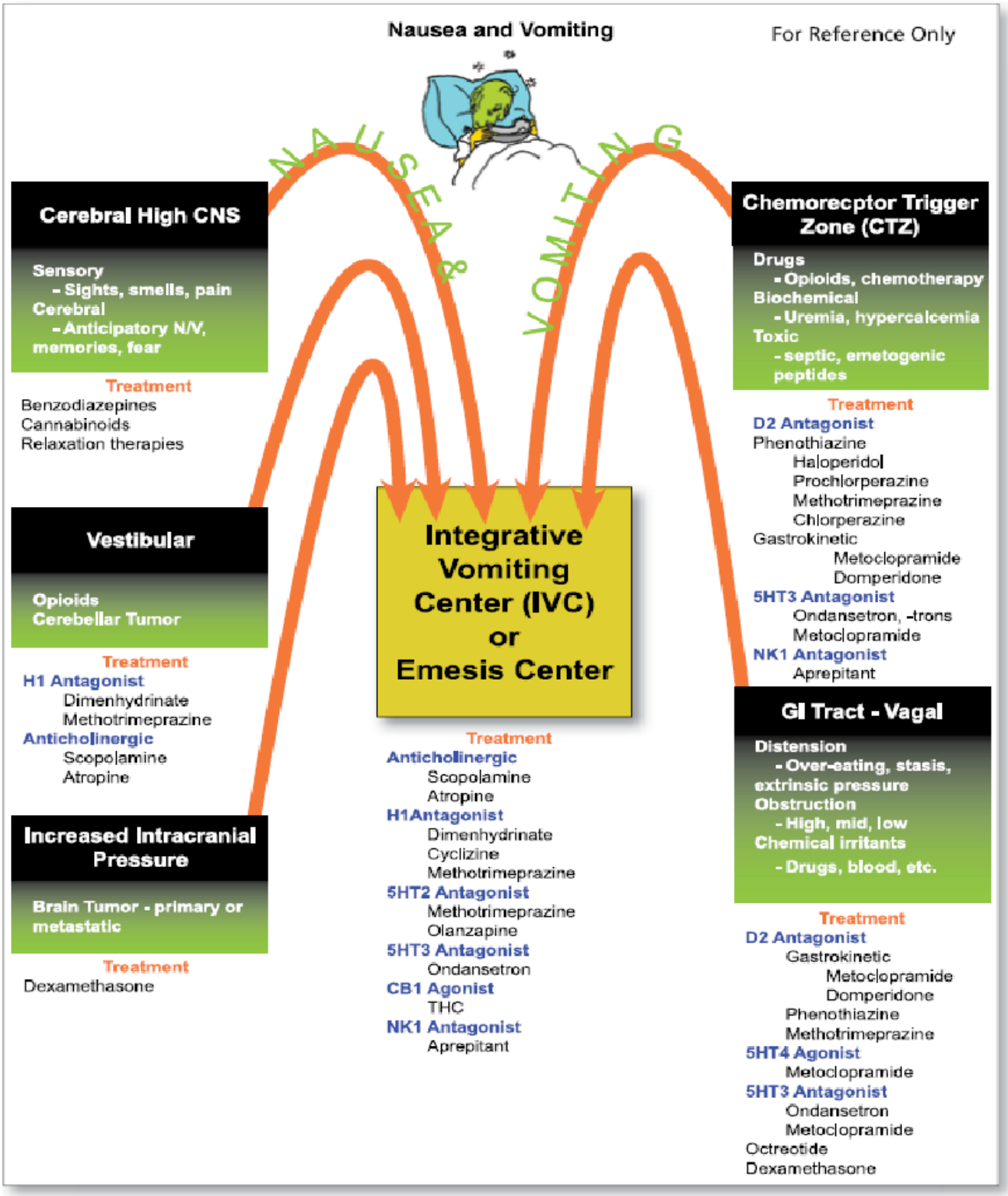
Contributing Factors	
Cancer Treatments	Chemotherapy: *For emetogenicity of chemotherapeutic agent, See Appendix A and Cancer Drug Manual in Resources Section* Immunotherapy/Biotherapy Radiation Therapy: Surgery/Anesthesia
Medication	• Antibiotics • Opioids &/or Opioid withdrawal • NSAIDs • SSRI antidepressants • Iron supplements • Anticonvulsants • Bronchodilators
Cancer Related :	• Cancer of the GI tract • Brain metastases/Increased ICP • Reduced GI motility, Bowel Obstruction, Chemotherapy induced (e.g. Vincristine) • Constipation • Vestibular dysfunction • Anxiety, anticipatory nausea • Hypercalcemia, hyperglycemia, hyponatremia • Gastritis • Infections • Uremia • Pain/Headache
Risk Factors:	• Female • Less than 50 years of age • Decreased risk for patients with a high chronic alcohol intake Lack of regular alcohol use • History of motion/morning sickness, chemotherapy induced emesis.

Appendix A: Emetic Risk of Intravenous Antineoplastic Agents

Adapted from ASCO Guidelines (2011)

Emetic Risk of Antineoplastic Agents Administered Intravenously			
High	**Moderate**	**Low**	**Minimal**
• Carmustine • Cisplatin • Cyclophosphamide - greater than or equal to 1500mg/m2 • Dacarbazine • Dactinomycin • Mechlorethamine • Streptozotocin	• Azacitidine • Alemtuzumab • Bendamustine • Carboplatin • Clofarabine • Cyclophosphamide less than 1500mg/m2 • Cytarabine greater than 1000mg/m2 • Daunorubicin* • Doxorubicin* • Epirubicin* • Idarubicin* • Ifosfamide • Irinotecan	• Fluorouracil • Panitumumab • Bortezomib • Pemetrexed • Cabazitaxel • Temsirolimus • Cytarabine greater than or equal to 1000mg/m2 Topotecan • Docetaxel • Doxorubicin-Liposomal • Etoposide • Gemcitabine • Ixabepilone • Methotrexate • Mitomycin • Mitoxantrone	• Cladribine • Bevacizumab • Bleomycin • Busulfan • Cetuximab • Fludarabine • Pralatrexate • Rituximab • Vinblastine • Vincristine • Vinorelbine

*** These anthracyclines when combined with cyclophosphamide, are now designated as high emetic risk**



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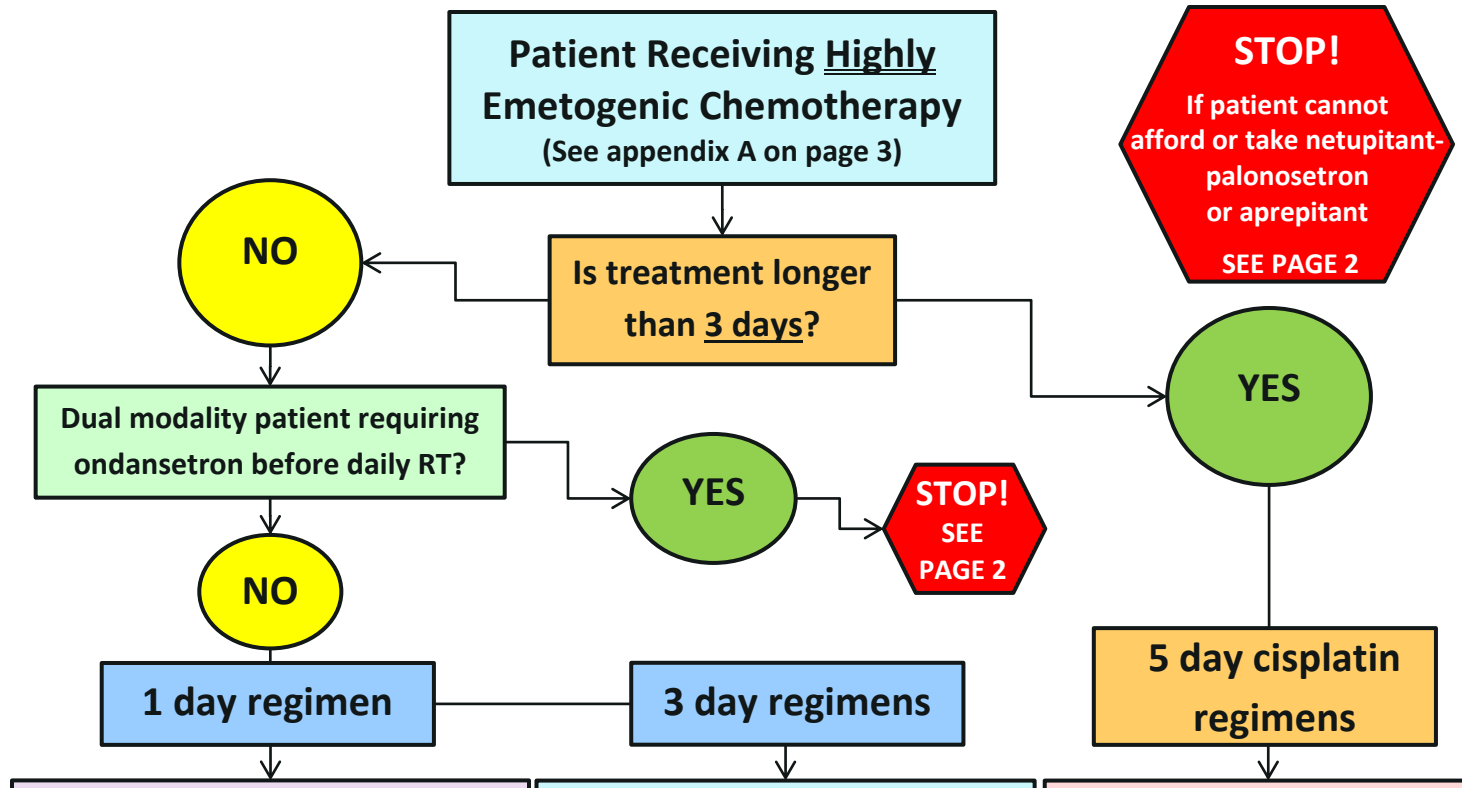

- **Netupitant-palonosetron** 300 mg/0.5 mg PO pre chemo day 1 only

OR

- **Aprepitant** 125 mg PO pre chemo, then 80 mg PO daily on days 2 and 3

PLUS (ONLY if using aprepitant)

- **Ondansetron** 8 mg PO pre chemo

PLUS

- **Dexamethasone** 8 to 12 mg PO pre chemo, then 4 mg PO evening of chemo, then BID x 2 to 4 days*

(* *when netupitant-palonosetron used with AC protocols, omission of day 2 to 4 dexamethasone doses recommended*)

OPTIONAL

- **Olanzapine** 5 to 10 mg PO pre chemo, then 5 to 10 mg daily on days 2,3, and 4

IF NOT USING OLANZAPINE

- **Prochlorperazine** 10 mg PO every 6 h PRN

OR

- **Metoclopramide** 10 to 20 mg PO every 4 to 6 h PRN

- **Netupitant-palonosetron** 300 mg/0.5 mg PO pre chemo day 1 only

OR

- **Aprepitant** 125 mg PO pre chemo, then 80 mg PO daily on days 2 to 5

PLUS (ONLY if using aprepitant)

- **Ondansetron** 8 mg PO pre chemo days 1 to 3

PLUS

- **Dexamethasone** 8 to 12 mg PO pre chemo, then 4 mg PO evening of chemo, then 4 mg PO BID on days 2 to 5

OPTIONAL

- **Olanzapine** 5 to 10 mg PO pre chemo, then 5 to 10 mg daily on days 2 to 5

IF NOT USING OLANZAPINE

- **Prochlorperazine** 10 mg PO every 6 h PRN

OR

- **Metoclopramide** 10 to 20 mg PO every 4 to 6 h PRN

- **Aprepitant** 125 mg PO pre chemo, then 80 mg PO daily on days 2 to 7

PLUS

- **Dexamethasone** 8 to 12 mg PO pre chemo, then 4 mg PO evening of chemo, then 4mg PO BID on days 2 to 8

PLUS

- **Ondansetron** 8 mg PO pre chemo days 1 to 5

OPTIONAL

- **Olanzapine** 5 to 10 mg PO pre chemo, then 5 to 10mg daily on days 2 to 7

IF NOT USING OLANZAPINE

- **Prochlorperazine** 10 mg PO every 6 h PRN

OR

- **Metoclopramide** 10 to 20 mg PO every 4 to 6 h PRN

Consider adding olanzapine if nausea / vomiting not controlled with 5-HT3 antagonist plus dexamethasone plus NK1 antagonist in previous cycle, **especially if delayed nausea is a concern

In general, lower dexamethasone doses and/or shorter durations may be considered for patients on non-cisplatin regimens

Single doses of 5-HT3 antagonists are as effective as multiple doses. There is no role for the routine use of 5-HT3 antagonists more than 24 hrs after chemo

2 additional days of aprepitant post chemo is recommended for 1, 3, and 5 days regimens.

Patient can't afford or take netupitant-palonosetron or aprepitant

Is treatment longer than 1 day?

NO

1 day regimen

- **Dexamethasone** 8 to 12 mg PO pre chemo, then 4 mg PO evening of chemo, then BID x 2-4 days

PLUS

- **Ondansetron** 8 mg PO pre chemo***

PLUS (If able)***

- **Olanzapine** 5 to 10 mg PO pre chemo, then 5 to 10 mg daily on days 2, 3, and 4

IF NOT USING OLANZAPINE

- **Prochlorperazine** 10 mg PO every 6 h PRN

OR

- **Metoclopramide** 10 to 20 mg PO every 4 to 6 h PRN

YES

If patient on multiple day chemo protocol (particularly cisplatin), and absolutely cannot take netupitant-palonosetron or aprepitant, and protocol can't be changed, consider trial of olanzapine, or admission to hospital for nausea management

***If patient unable to take olanzapine, consider (if able) prescribing extra ondansetron (e.g. 8 mg pre chemo, then 8 mg PO BID x 2 to 4 DOSES)**

Dual modality patient requiring ondansetron before daily Radiation Therapy

If patient is taking ondansetron daily, they CANNOT take netupitant-palonosetron due to the risk of QTc prolongation, and must take aprepitant instead

- **Aprepitant** 125 mg PO pre chemo, then 80 mg PO daily on days 2 and 3

PLUS

- **Dexamethasone** 8 to 12 mg PO pre chemo, 4 mg PO evening of chemo, then 4 mg PO BID for 2 to 4 days

PLUS

- **Ondansetron** 8 mg PO pre chemo on treatment days

OPTIONAL

- **Olanzapine** 5 to 10 mg PO pre chemo, then 5 to 10 mg daily on days 2 to 5

IF NOT USING OLANZAPINE

- **Prochlorperazine** 10 mg PO every 6 h PRN

OR

- **Metoclopramide** 10 to 20 mg PO every 4 to 6 h PRN

Good to Know

- This is a general reference based upon best available evidence and is not intended to replace the clinical judgment of individual practitioners caring for individual patients.
- Remember, the goal is NO nausea or vomiting.
- Aprepitant is the NK_1 antagonist of choice for docetaxel containing regimens; pharmacokinetic studies demonstrate a 35% increase in docetaxel AUC when co-administered with netupitant-palonosetron.
- Aprepitant is the NK_1 antagonist of choice for 3 and 5 day regimens. Limited data support dosing oral aprepitant over extended days. Limited data exist for netupitant-palonosetron. Efficacy has been shown with standard dosing of 1 capsule on day one of a three-day HEC regimen.
- Netupitant-palonosetron is likely safe to use in patients with soy/peanut allergies; however, a very low potential for allergic reaction does exist as trace amounts of soya lecithin may be present.
- Olanzapine adverse drug reactions include sedation and QTc prolongation, drug interactions and black box warning of increased mortality in elderly patients with dementia. Olanzapine should NOT be used with metoclopramide, prochlorperazine, or haloperidol due to increased risk of extrapyramidal symptoms.
- No additional 5-HT3 antagonist is required if netupitant-palonosetron combination used (e.g. ondansetron).
- No dose adjustment of netupitant-palonosetron is required for mild to moderate renal impairment. Avoid in severe impairment (CrCl <30 mL/min) or end-stage renal disease requiring dialysis as no data available; **OKAY to give aprepitant to these patients.**
- No dosage adjustment of netupitant-palonosetron is required for mild to moderate hepatic impairment (Child Pugh 5-9). Avoid in severe impairment (Grade C, Child Pugh > 9) as limited data (**aprepitant is okay in mild to moderate impairment; no data in severe impairment**).

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*** These anthracyclines when combined with cyclophosphamide, are now designated as high emetic risk**			