National Community Oncology Dispensing Association, Inc.
PASSION FOR PATIENTS

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Positive Quality Intervention: Chemotherapy-Induced Nausea and Vomiting

Description: Patients receiving cancer therapies should be adequately assessed and managed to prevent chemotherapy-induced nausea and vomiting (CINV). 5-hydroxytryptamine (5-HT3) receptor antagonists, neurokinin-1 receptor (NK1R) antagonists, glucocorticoids, benzodiazepines, dopaminergic agents and other therapeutic classes have demonstrated substantial antiemetic activity. Despite proven efficacy, choice of therapy should be tailored to the individual patient based on the distinct types of CINV, patient risk factors and emetogenic potential of therapy. Guidelines for antiemetic therapy for intravenously administered chemotherapy according to the estimated risk of CINV are available from American Society of Clinical Oncology, National Comprehensive Cancer Network and the Multinational Association of Supportive Care in Cancer/ European Society for Medical Oncology[1-3]. Optimal control and prevention of CINV has been associated with improved adherence to cancer therapy stressing the importance of understanding and adhering to these guidelines[4,5].

Background: CINV remains one of the most debilitating toxicities associated with cancer therapy leading to poor compliance with further treatment, dehydration, metabolic imbalances, degeneration of self-care and functional inability, anorexia and decline in performance status[1,6]. Optimal management of CINV begins with the assessment of the intrinsic emetogenicity of chemotherapy which is categorized as low, moderate or high with an incidence of <10%, 10% - 30% and > 90%, respectively[1-3]. The emetogenic potential of the regimen should be coupled with other risk factors such as age, sex, history of alcohol consumption, combined chemoradiation, previous tolerability of chemotherapy and anatomical location of tumor (i.e. head and neck) to select an optimal antiemetic regimen. As much as 80% of CINV can be prevented with appropriate administration of antiemetics[6].

Drug therapy*:

- 5-HT3 receptor antagonists: ondansetron, granisetron, dolasetron, palonosetron
- NK1R antagonists**: aprepitant, fosaprepitant, rolapitant
- Glucocorticoids: dexamethasone
- Benzodiazepines: lorazepam
- Dopaminergic agents: prochlorperazine, olanzapine, chlorpromazine
- Combinations: netupitant/palonosetron, fosnetupitant/palonosetron
- Other: metoclopramide, scopolamine, promethazine, meclizine, dronabinol

*Most commonly utilized agents, not exclusive of all agents
**Additional agents available as combination product

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PQI Process: Upon receipt of an order for a chemotherapy regimen:

- Assess the antiemetic potential of therapy, patient risk factors, and disease state
    - High emetogenicity: NK1R antagonists + 5-HT3 receptor antagonists + dexamethasone ± olanzapine
    - Moderate emetogenicity: 5-HT3 receptor antagonists + dexamethasone ± NK1R antagonists
    - Low emetogenicity: 5-HT3-receptor antagonist or dexamethasone or phenothiazine
- Evaluate drug-drug and drug-patient interactions to minimize adverse drug reactions (i.e. benzodiazepine and phenothiazine dosing in elderly, olanzapine interactions [refer to Olanzapine Use in CINV PQI] dexamethasone dosing with fosaprepitant, etc.)
- Ensure take home antiemetics have been prescribed and will be in possession of the patient once home (may require coordination with caretakers and dispensing pharmacy)
- Provide education to patients and caretakers (refer to Patient Centered Activities)
- Follow up with patients (who have moderate to high emetogenicity on day 2/3 of cycle 1) upon return for cycle 2 of chemotherapy and determine future plans as clinically appropriate:
    - Assess for adequate management and prophylaxis
    - Consider benzodiazepines for anticipatory nausea/vomiting
    - Determine the need to modify antiemetic regimen based on incidence of acute, delayed and breakthrough events

Patient Centered Activities:

- Provide antiemetic counseling to patients and caretakers with written or graphic visual aids to easily guide drug selection at home. This should include:
    - When to initiate take home 5-HT3 receptor antagonists if a long acting agent has been administered with chemotherapy
    - Prioritizing and sequencing different agents of the take home antiemetic regimen for adequate control of CINV
    - Ensure a clear understanding of scheduled antiemetics such as dexamethasone or olanzapine
- Have patient verbalize how they plan to utilize their antiemetics at home
- Review common side effects with the patient (sedation, headaches, constipations, extrapyramidal symptoms, etc.)
- Inform patients to drink plenty of fluids and avoid/minimize alcoholic beverages
- Ensure patients have contact information for the clinic and know when to contact the clinic.

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Supplemental Information

Select Therapies for Chemotherapy-Induced Nausea and Vomiting Prevention

Risk Category	Agent	Dosing on Day 1	Dosing on subsequent days
High emetic risk (>90%)	NK1R antagonist (one of the following)		
	Aprepitant	125 mg PO	80 mg PO Days 2 & 3
	Fosaprepitant	150 mg IV	
	Rolapitant*	180 mg PO or 166.5 mg IV	
	PLUS		
	5-HT3 antagonist (one of the following)		
	Palonosetron	0.5 mg PO or 0.25 mg IV	
	Granisetron	2 mg PO or 1 mg IV	
	Ondansetron	8 mg PO or IV	
	PLUS		
	Dexamethasone	12 - 20 mg PO or IV	8 mg PO or IV daily Days 2 to 4 (chemotherapy dependent)
	PLUS		
	Olanzapine	5 – 10 mg PO	5 – 10 mg PO daily Days 2 to 4
	OR		
	Netupitant plus palonosetron or Fosnetupitant plus palonosetron	Once	
	PLUS		
	Dexamethasone	12 - 20 mg PO or IV	8 mg PO or IV daily Days 2 to 4 (chemotherapy dependent)
	PLUS		
	Olanzapine	5 – 10 mg PO	5 – 10 mg PO daily Days 2 to 4

*The FDA has issued a safety alert that anaphylaxis, anaphylactic shock and other serious hypersensitivity reactions have been reported in the postmarketing setting, some requiring hospitalization with rolapitant.

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Moderate emetic risk (10 to 30%)	5-HT3 antagonist (one of the following from high risk)		
	PLUS		
	Dexamethasone	8 - 20 mg PO or IV	8 mg PO or IV daily Days 2 to 4 (chemotherapy dependent)
	MAY CONSIDER IF CARBOPLATIN-BASED OR HIGH-RISK POTENTIAL		
	NK1R antagonist (one of the following from high risk)		
	Olanzapine	5 – 10 mg PO	5 – 10 mg PO daily Days 2 to 4

Low emetic risk (<10%)	Dexamethasone	4 - 8 mg PO or IV	
	OR		
	5-HT3 antagonist (one of the following from high risk)		
	OR		
	Phenothiazine-type drug		

All patients should have supportive antiemetic therapy at home. Select patients with minimal risk for chemotherapy-induced nausea/vomiting may not require any treatment.