ASCO 2011 Antiemetics Guideline Update:

Drug, Dose, Schedule Recommendations for Antiemetic Regimens

ASCO Guidelines
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Antiemetic Dosing by Chemotherapy Risk Category

	Agent	Dose on Day of Chemotherapy	Dose(s) on Subsequent Days
High Emetic Risk: carmustine, cisplatin, cyclophosphamide≥1500 mg/m^2, dacarbazine, dactinomycin, mechlorethamine, streptozotocin, and combined anthracycline and cyclophosphamide regimens			
NK_1 Antagonist	Aprepitant	125 mg oral	80 mg oral; days 2 and 3
	Fosaprepitant	150 mg IV	Day 1 only
5-HT_3 Receptor Antagonist	Granisetron	2 mg oral *OR* 1 mg or 0.01 mg/Kg IV	Day 1 only
	Ondansetron	8 mg oral twice daily *OR* 8 mg or 0.15 mg/Kg IV	
	Palonosetron	0.50 mg oral *OR* 0.25 mg IV	
	Dolasetron	100 mg oral ONLY	
	Tropisetron	5 mg oral *OR* IV	
	Ramosetron	0.3 mg IV	
Corticosteroid [a]	Dexamethasone	12 mg oral *OR* IV	8 mg oral *OR* IV; days 2 – 3 OR days 2 – 4 [a]
Moderate Emetic Risk: azacitidine, alemtuzumab, bendamustine, carboplatin, clofarabine, cyclophosphamide<1500 mg/m^2, cytarabine>1000 mg/m^2, daunorubicin[b], doxorubicin[b], epirubicin[b], idarubicin[b], ifosfamide, irinotecan, oxaliplatin			
5-HT_3 Receptor Antagonist	Palonosetron[c]	0.50 mg oral *OR* 0.25 mg IV	
Corticosteroid [d]	Dexamethasone	8 mg oral *OR* IV	8 mg; days 2 – 3[d]
Low Emetic Risk: fluorouracil, bortezomib, cabazitaxel, catumaxomab, cytarabine ≤1000 mg/m^2, docetaxel, doxorubicin HCL liposome injection, etoposide, gemcitabine, ixabepilone, methotrexate, mitomycin, mitoxantrone, paclitaxel, panitumumab, pemetrexed, temsirolimus, topotecan, trastuzumab			
Corticosteroid	Dexamethasone	8 mg oral *OR* IV	
Minimal Emetic Risk: 2-Chlorodeoxyadenosine, bevacizumab, bleomycin, busulfan, cetuximab, fludarabine, rituximab, vinblastine, vincristine, vinorelbine			
No antiemetic should be administered routinely before or after chemotherapy.			

[a] Presumes patients are receiving an NK_1 antagonist. If they are not, the **dexamethasone dose should be adjusted** to 20 mg on day 1 and 16 mg on days 2-4.
[b] These anthracyclines, when combined with cyclophosphamide, are now designated as high emetic risk chemotherapy.
[c] If palonosetron is not available, granisetron and ondansetron are preferred substitutions but any of the first-generation 5-HT_3 receptor antagonists are acceptable. Doses of all 5-HT_3 receptor antagonists are the same as those listed for high emetic risk.
[d] If an NK_1 antagonist is used with moderate risk chemotherapy, NK_1 doses are the same as those for high risk but the **dexamethasone dose is modified** to 12 mg, day one only.
Abbreviations: 5-HT_3, 5-hydroxytryptamine-3; IV, intravenous; NK_1, neurokinin 1

Antiemetic Dosing by Radiation Risk Category

	Agent	Dose	Schedule
High Emetic Risk: total body irradiation (TBI), total nodal irradiation			
5-HT$_3$ Receptor Antagonist	Granisetron [a]	2 mg oral *OR* 1 mg or 0.01 mg/kg IV	5-HT$_3$ receptor antagonist before each fraction throughout XRT, continue for at least 24 hours following completion of XRT
	Ondansetron [a]	8 mg oral twice daily *OR* 8 mg or 0.15 mg/kg IV	
	Palonosetron [b]	0.50 mg oral *OR* 0.25mg IV	
	Dolasetron	100 mg oral ONLY	
	Tropisetron	5 mg oral *OR* IV	
Corticosteroid	Dexamethasone	4 mg oral *OR* IV	During fractions 1-5
Moderate Emetic Risk: upper abdomen, upper body irradiation (UBI), half body irradiation (HBI)			
5-HT$_3$ Receptor Antagonist	Any of the above listed agents are acceptable; granisetron and ondansetron are preferred [b]		5-HT$_3$ receptor antagonist before each fraction throughout XRT
Corticosteroid	Dexamethasone	4 mg IV *OR* oral	Consider during fractions 1-5
Low Emetic Risk: cranium, craniospinal, head and neck, lower thorax region, pelvis			
5-HT$_3$ Receptor Antagonist	Any of the above listed agents are acceptable; granisetron and ondansetron are preferred [a]		5-HT$_3$ receptor antagonist as either prophylaxis or rescue. If rescue is utilized, then prophylactic therapy should be given until the end of XRT.
Minimal Emetic Risk: extremities, breast			
5-HT$_3$ Receptor Antagonist	Any of the above listed agents are acceptable; granisetron and ondansetron are preferred		Patients should be offered either class as rescue therapy. If rescue is utilized, then prophylactic therapy should be given until the end of XRT.
Dopamine receptor antagonist	Metoclopramide	20 mg oral	
	Prochlorperazine	10 mg oral *OR* IV	

[a] No data are available on the appropriate frequency of palonosetron dosing during radiation therapy. The Update Committee suggests every 2nd or third day may be appropriate.

Abbreviations: 5-HT$_3$, 5-hydroxytryptamine-3; IV, intravenous; XRT, radiation therapy

Additional Antiemetic Recommendations

Combination Chemotherapy
Antiemetic therapy for the chemotherapeutic agent of greatest emetic risk should be given.
Adjunctive Agents
Lorazepam or diphenhydramine are useful adjuncts to antiemetics, but are not recommended as single agents.
Pediatric Patients
The combination of a 5-HT_3 receptor antagonist plus a corticosteroid is suggested before chemotherapy for children receiving chemotherapy of high or moderate emetic risk. Variation of pharmacokinetic parameters in children may necessitate higher weight-based doses of 5-HT_3 receptor antagonist than those used in adults.
High Dose Chemotherapy with Stem Cell or Bone Marrow Transplant
A 5-HT_3 receptor antagonist and dexamethasone are suggested. Aprepitant should be considered, though evidence is limited.
Multi-Day Chemotherapy
Antiemetic therapy according to the emetic risk of the chemotherapy should be administered each day of chemotherapy and 2 days afterward, if appropriate. Patients can also be offered the granisetron transdermal patch that delivers therapy over multiple days rather than taking a serotonin antagonist daily.
Nausea or Vomiting Despite Optimal Prophylaxis
(1) Re-evaluate emetic risk, disease status, concurrent illnesses, and medications; (2) Ascertain that the best regimen is being administered for the emetic risk; (3) Consider adding lorazepam or alprazolam to the regimen; and (4) Consider adding olanzapine or substituting high-dose IV metoclopramide for the 5-HT_3 receptor antagonist or adding a dopamine antagonist to the regimen.
Anticipatory Nausea and Vomiting
Behavioral therapy with systematic desensitization is suggested. Use of the most active regimens appropriate for the chemotherapy being administered to prevent nausea and vomiting is suggested. Assessing a patient's emetic response with less effective treatment is discouraged.

Abbreviations: IV, intravenous; mg, milligrams; kg, kilograms; XRT, radiation therapy

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