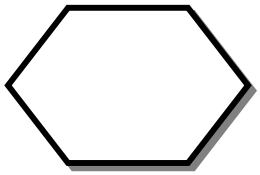
ANTI-EMETIC

Practice Guidelines

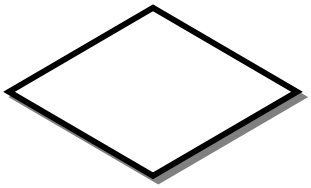
Guidelines Legend

Clinical State

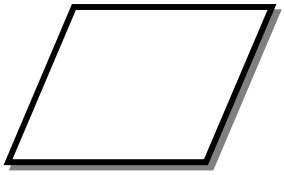
Do Box



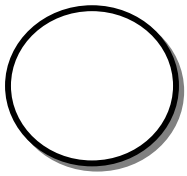
Diagnostic Assessment



Stage



Treatment

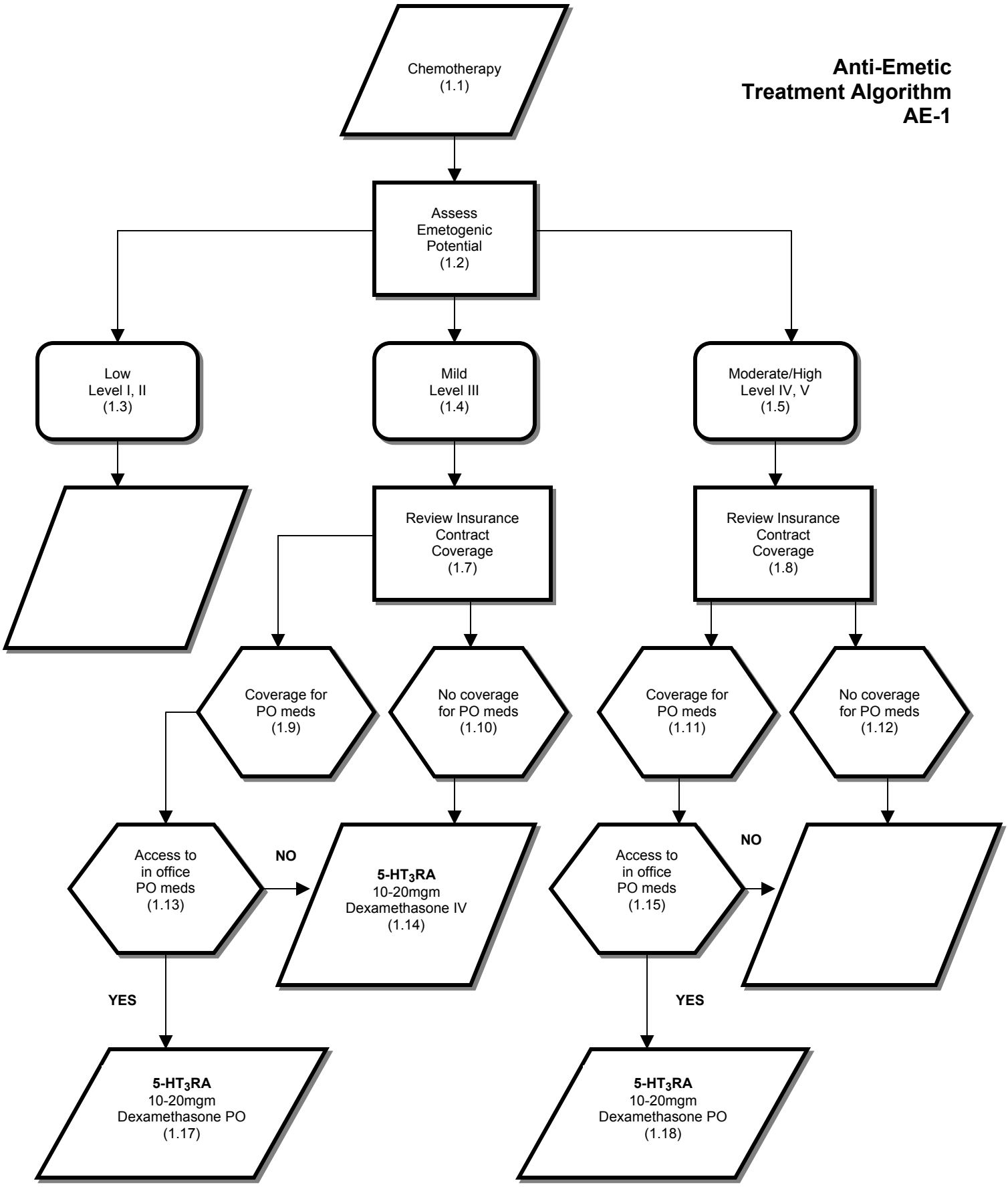


Reference to another algorithm

NOTE:

Algorithm's number sequence within the parenthesis ( ) are defined as such:
First number represents the guideline treatment; second number represents the directional step; an asterisk* represents additional notes listed on the following page(s).

Anti-Emetic Treatment Algorithm AE-1



Anti-Emetic Protocol (AEP) for Chemotherapy

Patient's Name: _____

Physician's Name: _____

Check all appropriate boxes (☐)

Level:	Emetogenic Potential:	Anti-Emetic Regimen:	PRN:	Routine:
☐ **I, II**	**Low to Minimal**	☐ Compazine 10mg IV	☐	☐
		☐ Compazine spansule 15mg PO	☐	☐
		☐ Dexamethasone 10mg IV	☐	☐
		☐ Dexamethasone 20mg IV	☐	☐
		☐ Dexamethasone 10mg PO	☐	☐
		☐ Dexamethasone 20mg PO	☐	☐

Level:	Emetogenic Potential:	Anti-Emetic Regimen:	PRN:	Routine:
☐ **III**	**Mild**	☐ Dolasetron 100mgm PO	☐	☐
		OR ☐ Kytril 2mgm PO	☐	☐
		(FOR PO SEE NOTE BELOW)		
		☐ Dolasetron 100 mgm IV	☐	☐
		OR ☐ Kytril 1mgm IV	☐	☐
		☐ Dexamethasone 10mg IV	☐	☐
		☐ Dexamethasone 20mg IV	☐	☐
		☐ Dexamethasone 10mg PO	☐	☐
		☐ Dexamethasone 20mg PO	☐	☐
		☐ Compazine spansule 15mg PO	☐	☐

Level:	Emetogenic Potential:	Anti-Emetic Regimen:	PRN:	Routine:
☐ **IV, V**	**Moderate/High**	☐ Dolasetron 100mgm PO	☐	☐
		OR ☐ Kytril 2mgm PO	☐	☐
		(FOR PO SEE NOTE BELOW)		
		☐ Dolasetron 1.8mgm/kg IV	☐	☐
		OR ☐ Kytril 1mgm IV	☐	☐
		☐ Dexamethasone 10mg IV	☐	☐
		☐ Dexamethasone 20mg IV	☐	☐
		☐ Dexamethasone 10mg PO	☐	☐
		☐ Dexamethasone 20mg PO	☐	☐
		☐ Compazine spansule 15mg PO	☐	☐

NOTE: **N.B.** - For administration of oral Dolasetron the following two (2) conditions ***must*** apply:

1) Insurance covers in office administration of PO anti-emetics; and

2) The drug is available in the office.

If either condition does not apply, the IV drug is ordered.

PRN Anti-Emetics:

☐ Compazine 10mg IV q4-6h
☐ Lorazepam 1mg Iv q4-6h
☐ Droperidol 1-2mg IV q4h (refractory nausea)

Delayed Anti-Emetic Regimen:

☐ Dexamethasone 8mg PO bid x 2 days, then 4mg bid x 2 days, plus
☐ Metoclopramide 20mg PO qid x 2 days, plus Diphenhydramine 25 -50mg PO prn dystonia
☐ Compazine spansule 15 - 30mg PO bid

_____
Physician's signature

_____
Date

Anti-Emetic Protocol (AEP) Guidelines for Adults

Acute Anti-Emetic Regimens:

Grade:	Acute Emetic Potential:	Anti-Emetic Regimen:
V	High	**5-HT$_3$RA (dolesetron, granisetron or ondansetron)** 10-20mg Dexamethasone IV/PO **OR** **5-HT$_3$RA (dolesetron, granisetron or ondansetron)** 10-20mg Dexamethasone PO (see note)

Grade:	Acute Emetic Potential:	Anti-Emetic Regimen:
IV	Moderate	**5-HT$_3$RA (dolesetron, granisetron or ondansetron)** 10-20mg Dexamethasone IV/PO **OR** **5HT$_3$RA (dolesetron, granisetron or ondansetron)** 10-20mg Dexamethasone PO

Grade:	Acute Emetic Potential:	Anti-Emetic Regimen:
III	Mild	**5-HT$_3$RA (dolesetron, granisetron or ondansetron)** 10-20mg Dexamethasone IV/PO **OR** **5-HT$_3$RA (dolesetron, granisetron or ondansetron)** 10-20mg Dexamethasone PO (see note)

Grade:	Acute Emetic Potential:	Anti-Emetic Regimen:
II	Low	Dexamethasone 10-20mg IV/PO

Grade:	Acute Emetic Potential:	Anti-Emetic Regimen:
I	Minimal	PRN anti-emetics only

NOTE: Not all providers reimburse for oral anti-emetics given in the office. Check algorithm and insurance coverage before giving PO regimen.

Delayed Anti-Emetic Regimen:
To begin the morning of the day following chemotherapy which may require delayed anti-emetic regimen.

- Dexamethasone 8mg PO bid x 2 days, taper to 4mg bid x 2 days;

PLUS

- Prochlorperazine 15mg spansule PO bid x 2 days plus Diphendydramine 50mg PO q 4hrs prn restlessness;

OR

- Dexamethasone 8mg PO bid x 2 days, taper to 4mg bid x 2 days;

PLUS

- Metoclopramide 30mg PO qid x 2 days plus Diphenhydramine 25-50mg PO q 4hrs prn restlessness.

PRN Anti-Emetics:
All patients (Grade I-V) should have PRN anti-emetics ordered. Patients receiving Grade I chemotherapy regimens require PRN anti-emetics only:

- Lorazepam 1-3mg PO/IV every 4-6 hours prn;
- Prochlorperazine spansule 15mg PO bid prn;

OR

- Metoclopramide 30mg PO every 4 hours prn, plus Diphenhydramine 50mg PO prn dystonia reactions or restlessness.

NOTE: Patients should receive Dexamethasone concurrently with Serotonin antagonists when possible. For leukemia, lymphoma, multiple myeloma, and bone marrow transplant patients, refer to individual protocols for Dexamethasone use. Patients may not tolerate Metoclopramide or Prochlorperazine for delayed emesis regimens, however, Dexamethasone is strongly recommended.

Anti-Emetic Protocol (AEP) Guidelines for Adults

Emetogenic potential of individual chemotherapy agents:

Grade:	Acute Emetic Potential:			
V	High	Busulfan	Cytarabine > 1000mg/m^2	Mechlorethamine
		Carboplatin > 1000mg/m^2	Dacarbazine > 500mg/m^2	Melphalan > 140mg/m^2
		Carmustine > 200mg/m^2	Dactinomycin	Streptozocin
		Cisplatin > 70mg/m^2	Ifosfamide > 3g/m^2	Thiotepa
		Cyclophosphamide > 1000mg/m^2	Lomustine > 60mg/m^2	

Grade:	Acute Emetic Potential:			
IV	Moderate	Amifostine (Ethyol) > 200mg/m^2	Daunorubicin > 75mg/m^2	Methotrexate ≥1000mg/m^2
		Carboplatin 300-1000mg/m^2	Doxorubicin ≥ 45mg/m^2	Pentostatin
		Carmustine < 200mg/m^2	Eloxatin	Plicamycin (Mitramycin)
		Cisplatin < 70mg/m^2	Epirubicin (Ellenece)	Procarbazine 100mg/m^2
		Cyclophosphamide 750-1000mg/m^2	Idarubicin	Velcade
		Cytarabine 250-1000mg/m^2	Ifosfamide 1200-3000mg/m^2	
		Dacarbazine < 500mg/m^2	Lomustine < 60mg/m^2	

Grade:	Acute Emetic Potential:			
III	Mild	Aldesleukin	Cyclophosphamide 750mg/m^2	Gemtuzumab (Mylotarg)
		Altretamine	Cytarabine 20-250mg/m^2	Ifosfamide <1200mg/m^2
		Amifostine (Ethyol) <200mg/m^2	Denileukin (Ontak)	Methotrexate <250mg/m^2
		Arsenic toxicide (Trisenox)	Doxorubicin 20-45mg/m^2	Mitotane
		Carboplatin <300mg/m^2	Etoposide	

Grade:	Acute Emetic Potential:			
II	Low	Alemtuzumab (Campath)	5FU ≥ 1000mg/m^2	Mitomycin
		Bleomycin	Fludarabine < 30mg/m^2	Mitoxantrone 10-14mg/m^2
		Cytarabine < 20mg/m^2	Gemcitabine 1000mg/m^2	Peg Interferon-alpha
		Docetaxel 60-100 mg/m^2	Hydroxyurea 1000-6000mg/m^2	(PEG-Intron)
		Doxorubicin < 20mg/m^2	Irinotecan 125 mg/m^2	Topotecan 1.5mg/m^2
		Doxil (liposomal doxorubicin)	Methotrexate < 250mg/m^2	

Grade:	Acute Emetic Potential:			
I	Minimal	Asparaginase	Fulvestrant (Faslodex)	Rituxan
		BCG	Goserelin	Trastuzumab (Herceptin)
		Chlorambucil	Interferon	Valrubicin (Valstar)
		Cladribine	Irbitumomab (Zevalin)	Vinblastine
		Cyclophosphamide (po)	Leuprolide	Vincristine
		Floxuridine	Paclitaxel	Vinorelbine
		5FU < 1000mg/m^2	Pegasparaginase	

Determination of Emetogenic Potential of Chemotherapy Combination Regimens:

1. Combining two (2) antineoplastic agents from Class II and above increases the emetogenic potential of the combination (one) 1 class higher than the most emetogenic agent in the combination. (Example: Low + Mild = Moderate; Mild + Moderate = High; Low + Moderate = High)

2. Combine three (3) agents from Class III and above raises the emetogenic level 2 classes higher than the most emetogenic agent in the combination. (Example: Mild + Mild + Mild = High)

3. Combining three (3) agents where two (2) are from Class II, follow rule #1. (Example: Low + Low + Mild = Moderate)

4. The addition of any number of agents from Class I does not change the calculated class.

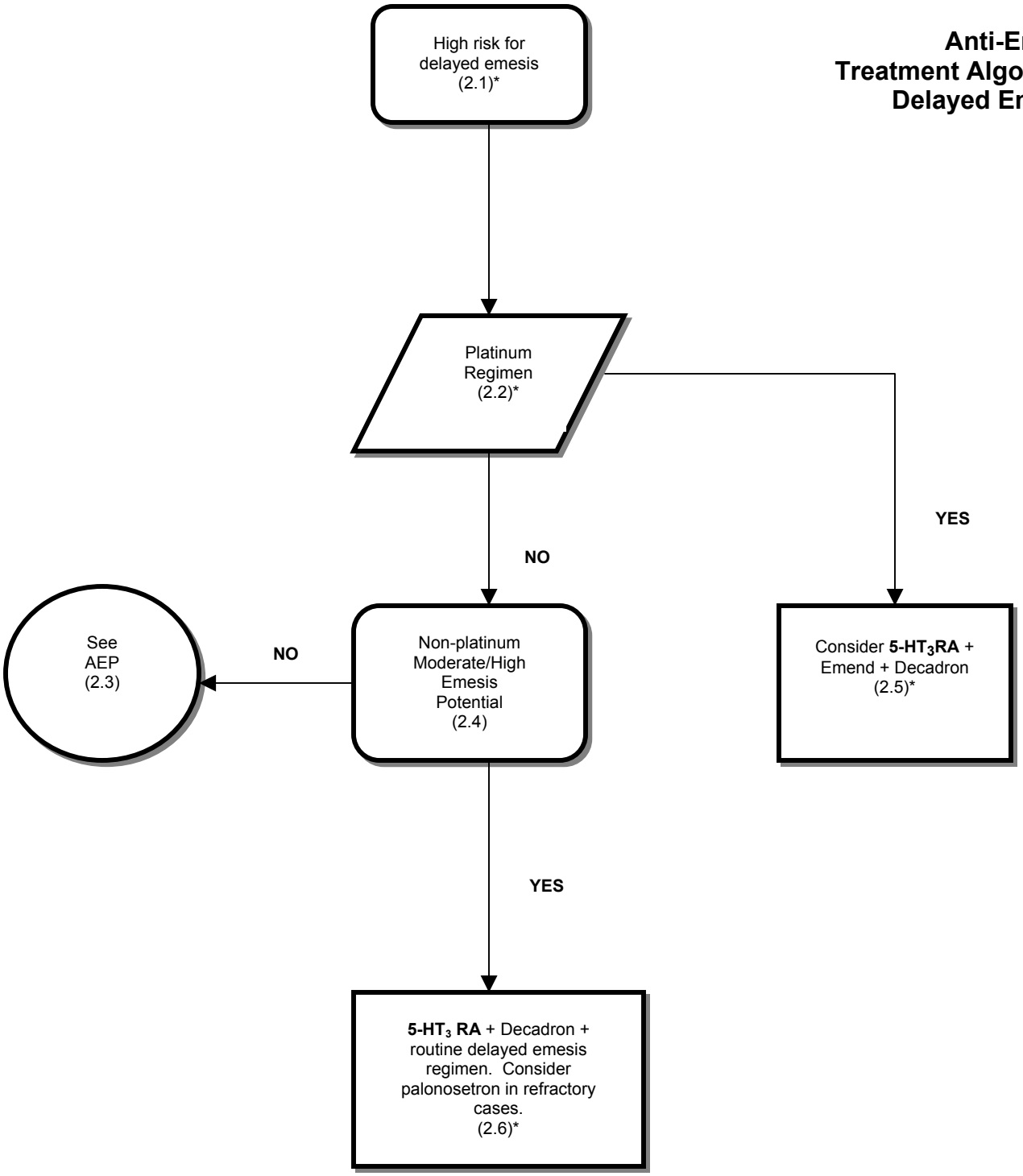
5. When in doubt, raise to a higher class.

_____
Physician's signature

Source: Hesketh P, et al. Support Care Cancer 1995; 3:340

_____
Date

Anti-Emetic Treatment Algorithm Delayed Emesis AE-2



Anti-Emetic Practice Guidelines - NOTES
AE-2:

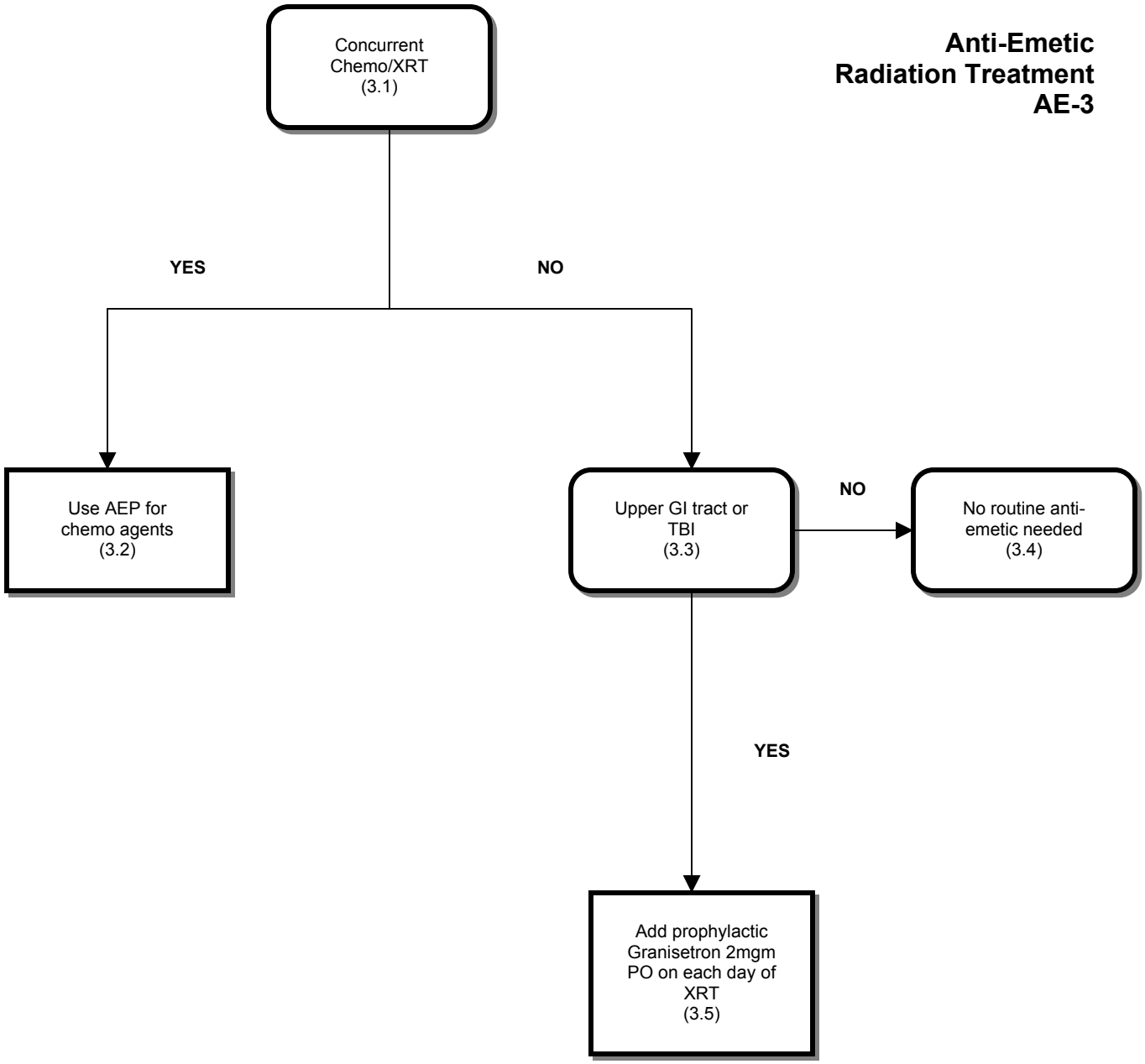
2.1 Although not perfect, **5-HT$_3$RA** receptor antagonists (RAs) represented a significant step towards emesis control in cancer chemotherapy. However, delayed emesis has continued to be a problem. There are those with high risk for delayed emesis. Risk factors include acute emesis with chemotherapy, delayed emesis with previous chemotherapy, lack of alcohol use, female sex, previous history of morning or motion sickness. Using platinum containing chemotherapy as maximal emetogenesis, slightly over 50% of patients will have control of delayed emesis with standard AEP recommendations that is a **5-HT$_3$ RA** on day 1 and Decadron and metoclopramide on days 2-5. A new neurokinin-1 antagonist, aprepitant (Emend), when added to a **5-HT$_3$ RA** has improved control to 70+% through day 5. In addition, a longer acting **5-HT$_3$ RA** has been approved for use, palonosetron (Aloxi). This is not approved for delayed emesis prevention for platinum containing regimens but may improve delayed emesis control with moderately emetogenic regimens. Even with these new drugs, a significant obstacle to emesis control is standardizing the approach using the combination of drugs shown to lead to the best outcomes.

2.2 Aprepitant has been studied in regimens with >70 mgm/m2 cisplatin.

2.5 Aprepitant enhances the effects of Decadron so that a maximum of 8mgm daily is recommended with aprepitant on days 2 and 3. The role of palonosetron in this situation is unproven. Aprepitant is an oral preparation and will not be covered as part of chemotherapy. For Medicare patients it may be an out-of-pocket expense.

2.6 Control of acute emesis in moderately emetogenic chemotherapy (MEC) is 80-85% with **5-HT$_3$RA** plus a minimum of 8 mgm of decadron. With a regimen of decadron and metoclopramide the control rate for delayed emesis is 55-65%. (Roila F, Basurto C, Bosnjak G et al). Palonosetron has been shown to have a better control rate for delayed emesis for MEC when compared to a typical **5-HT$_3$ RA** only, without the use of decadron. (Rubenstein EB, Gralla RJ, Einsenberg P et al). When trials of typical **5-HT$_3$ RA** with decadron plus a delayed regimen are compared to the palonosetron trials, the results are similar. It has not been shown that palonosetron leads to better control than current regimens. A trial of palonosetron with decadron would be appropriate in those who have failed standard AEP recommendations. Adding Emend to standard non-platinum containing regimens with delayed emesis refractory to usual measures is also reasonable.

Anti-Emetic
Radiation Treatment
AE-3



REFERENCES
For Anti-Emetic

Roila F, Basurto C, Bosnjak G, et al. Optimal dose of dexamethasone inn preventing acute emesis induced by highly-moderately emetogenic chemotherapy: a randomized, double-blind, dose-finding study Proc Am Soc Clinic Onc 2003; 22:729 Abst 2930.

Rubenstein EB, Gralla RJ, Einsenberg P, et al. Paolnosetron compared with ondansetron or dolestron for prevention of acute and delayed chemotherapy-induced nausea and vomiting: combined results of two phase III trials. Proc Am Soc Clinic Onc 2003; 22:729 abst 2932.

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