

# MASCC/ESMO ANTIEMETIC GUIDELINE 2016

With Updates in 2019



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# Consensus

A few comments on this guideline set:

- This set of guideline slides represents the latest edition of the guideline process.
- This set of slides has been endorsed by the MASCC Antiemetic Guideline Committee and ESMO Guideline Committee.
- The guidelines are based on the votes of the panel at the Copenhagen Consensus Conference on Antiemetic Therapy, June 2015.
- Latest version: March 2016, with updates in 2019.

## Changes: The Steering Committee has clarified some points:

### 2016:

- A footnote clarified that aprepitant 165 mg is approved by regulatory authorities in some parts of the world ( although no randomised clinical trial has investigated this dose ). Thus use of aprepitant 80 mg in the delayed phase is only for those cases where aprepitant 125 mg is used on day 1.
- A probable modification in pediatric guidelines based on the recent Cochrane meta-analysis is indicated.
- The need to modify the dose of dexamethasone is related to all NK<sub>1</sub> RAs that have a CYP3A4 interaction.
- Restrictions on the dose of metoclopramide, as indicated by EMA, are highlighted as a footnote.

### 2018:

- Radiation therapy slides updated to delete % in risk categories

### 2019:

- Fosnetupitant has been added ( other agents to follow )
- Olanzapine is an option in prevention for some situations

## 2015 Copenhagen Antiemetic Guideline Committee Participants

- Matti Aapro, MD
- Enzo Ballatori, PhD
- Mary Jacqueline Brames, RN, BSN
- Eduardo Bruera, MD
- Luigi Celio, MD
- Alex Chan, PharmD
- Rebecca Clark-Snow, RN, BSN
- Andrew Davies, MD
- Mellar Davis, MD
- Kristopher Dennis, MD
- L. Lee Dupuis, RPh, PhD
- Lawrence Einhorn, MD
- Petra Feyer, MD
- Richard Gralla, MD
- Jørn Herrstedt, MD, DMSci
- Paul Hesketh, MD
- Regine Deniel Ihlen  
(*patient advocate*)
- Franziska Jahn, MD
- Karin Jordan, MD
- Ernesto Maranzano, MD
- Alexander Molassiotis, RN, PhD
- Rudolph Navari, MD, PhD
- Ian Olver, MD, PhD
- Andrea Orsey, MD
- Bernardo Rapoport, MD
- Cynthia Rittenberg, RN, MN
- Carla Ripamonti, MD
- Joseph Roscoe, PhD
- Fausto Roila, MD
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- Wim Tissing, MD
- Mitsue Saito, MD
- Lee Schwartzberg, MD
- Lillian Sung, MD, PhD
- Declan Walsh, MD
- David Warr, MD
- Marianne van de Wetering, PhD
- Theresa Zanatta  
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- Li Zhang, MD

## Disclosures (Receipt of honoraria or research funding; stocks; employment; conflicting leadership positions; expert testimony; other remuneration: in past 3 years)

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## Continents and Countries Represented in the Antiemetic Guideline Process

Asia	Japan, China, Hong Kong SAR, Singapore
Africa	South Africa
Australia/Oceania	Australia
Europe	Denmark, Germany, Italy, The Netherlands, Norway, Switzerland, United Kingdom
North America	Canada, United States of America

## Process

- Presentation of findings at Copenhagen meeting
- Committee work prior to Copenhagen meeting
  - Systematic literature review
  - Level of evidence / confidence ratings
- Group discussion and consensus
- Post-meeting follow-up if necessary
  - Recommendations
  - Second voting

## Consensus Criteria Required to Change Guideline

- Degree of agreement: 67% or greater
- Basis of evidence: well-conducted trials ♦ comparator consistent with guidelines and best practice ♦ at least 10% difference in degree of benefit



# Committees and Areas of Expertise

- I. Emetic Classification of Antineoplastic Agents
- II. Highly Emetic Chemotherapy
- III. Moderately Emetic Chemotherapy
- IV. Low or Minimally Emetic Chemotherapy
- V. Other Issues: Multiple-day and high-dose chemotherapy, refractory and breakthrough nausea and vomiting
- VI. Anticipatory Nausea and Vomiting
- VII. Radiotherapy-Induced Nausea and Vomiting
- VIII. Nausea and Vomiting in Children Receiving Chemotherapy
- IX. Nausea and Vomiting in Advanced Cancer
- X. Future Considerations: research directions, study design, economic considerations

## Process for the Future: Keeping the Guidelines Accurate, Up-to-Date, and Valid

- Permanent committees
- Each chair to query committee every 6 months regarding any new information that might affect the guideline
- Steering committee to query chairs for suggestions
- If evidence appears compelling, all group members asked for opinions
- If consensus is achieved, Guideline is updated on MASCC website

# ACUTE Nausea and Vomiting: SUMMARY

EMETIC RISK GROUP	ANTIEMETICS					
High Non-AC	5-HT <sub>3</sub>	+	DEX	+	NK <sub>1</sub>	+/- OLZ*
High AC	5-HT <sub>3</sub>	+	DEX	+	NK <sub>1</sub>	+/- OLZ*
Carboplatin	5-HT <sub>3</sub>	+	DEX	+	NK <sub>1</sub>	
Moderate (other than carboplatin)	5-HT <sub>3</sub>	+	DEX			
Low	5-HT <sub>3</sub>	or	DEX	or	DOP	
Minimal	No routine prophylaxis					

5-HT <sub>3</sub> = serotonin <sub>3</sub> receptor antagonist	DEX = DEXAMETHASONE	NK <sub>1</sub> = neurokinin <sub>1</sub> receptor antagonist such as APREPITANT or FOSAPREPITANT or ROLAPITANT or NEPA (combination of netupitant and palonosetron)	OLZ = OLANZAPINE	DOP = dopamine receptor antagonist
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**NOTE:** If the NK<sub>1</sub> receptor antagonist is not available for AC chemotherapy, palonosetron is the preferred 5-HT<sub>3</sub> receptor antagonist.

\* **OLZ:** Olanzapine may be added particularly if nausea is a concern.

## DELAYED Nausea and Vomiting: SUMMARY

EMETIC RISK GROUP	ANTIEMETICS
High Non-AC	<b>DEX</b> or (if APR 125mg for acute: ( <b>MCP</b> + <b>DEX</b> ) or ( <b>APR</b> + <b>DEX</b> )) +/- <b>OLZ*</b>
High AC	<b>NONE</b> or ( if APR 125mg for acute: <b>DEX</b> or <b>APR</b> ) +/- <b>OLZ*</b>
Carboplatin	<b>NONE</b> or (if APR 125mg for acute: <b>APR</b> )
Oxaliplatin, or anthracycline, or cyclophosphamide	<b>DEX can be considered</b>
Moderate (other)	No routine prophylaxis
Low and Minimal	No routine prophylaxis

**DEX = DEXAMETHASONE**

**MCP = METOCLOPRAMIDE**

**APR = APREPITANT**

**OLZ = OLANZAPINE**

## Committee I (1/5): The Four Emetic Risk Groups

HIGH	Risk in nearly all patients (> 90%)
MODERATE	Risk in 30% to 90% of patients
LOW	Risk in 10% to 30% of patients
MINIMAL	Fewer than 10% at risk

## Committee I (2/5): Emetic Risk Groups – Adults – Single IV Agents

<p><b>HIGH</b></p>	<p>Anthracycline/cyclophosphamide combination*            Carmustine            Cisplatin            Cyclophosphamide <math>\geq 1500</math> mg/m<sup>2</sup>            Dacarbazine            Mechlorethamine            Streptozocin</p>		
<p><b>MODERATE</b></p>	<p>Alemtuzumab            Azacitidine            Bendamustine            Carboplatin            Clofarabine            Cyclophosphamide <math>&lt; 1500</math> mg/m<sup>2</sup>            Cytarabine <math>&gt; 1000</math> mg/m<sup>2</sup></p>	<p>Daunorubicin            Doxorubicin            Epirubicin            Idarubicin            Ifosfamide            Irinotecan</p>	<p>Oxaliplatin            Romidepsin            Temozolomide**            Thiotepa            Trabectedin</p>

\* The combination of an anthracycline and cyclophosphamide in patients with breast cancer should be considered highly emetogenic.

\*\* No direct evidence found for temozolomide IV. Classification is based on oral temozolomide, since all sources indicate a similar safety profile.

## Committee I (3/5): Emetic Risk Groups – Adults – Single IV Agents

LOW	Aflibercept	Eribulin	Panitumumab
	Belinostat	Etoposide	Pemetrexed
	Blinatumomab	5-Fluorouracil	Pegylated liposomal doxorubicin
	Bortezomib	Gemcitabine	Pertuzumab
	Brentuximab	Ipilimumab	Temsirolimus
	Cabazitaxel	Ixabepilone	Topotecan
	Carfilzomib	Methotrexate	Trastuzumab-emtansine
	Catumaxumab	Mitomycin	Vinflunine
	Cetuximab	Mitoxantrone	
	Cytarabine $\leq 1000$ mg/m <sup>2</sup>	Nab- paclitaxel	
Docetaxel	Paclitaxel		

## Committee I (4/5): Emetic Risk Groups – Adults – Single IV Agents

MINIMAL	Bevacizumab	Pembrolizumab
	Bleomycin	Pixantrone
	Busulfan	Pralatrexate
	2-Chlorodeoxyadenosine	Rituximab
	Cladribine	Trastuzumab
	Fludarabine	Vinblastine
	Nivolumab	Vincristine
	Ofatumumab	Vinorelbine



## Committee I (5/5): Emetic Risk Groups – Adults – Single Oral Agents

HIGH	Hexamethylmelamine Procarbazine		
MODERATE	Bosutinib Ceritinib Crizotinib	Cyclophosphamide Imatinib Temozolomide	Vinorelbine
LOW	Afatinib Axatinib Capecitabine Dabrafenib Dasatinib Everolimus Etoposide Fludarabine	Ibrutinib Idelalisib Lapatinib Lenalidomide Olaparib Nilotinib Pazopanib	Ponatinib Regorafenib Sunitinib Tegafur Uracil Thalidomide Vandetanib Vorinostat
MINIMAL	Chlorambucil Erlotinib Gefitinib Hydroxyurea Melphalan	Methotrexate L-Phenylalanine mustard Pomalidomide Ruxolitinib	Sorafenib 6-Thioguanine Vemurafenib Vismodegib

## COMMITTEE II (1/6):

### Prevention of Acute Nausea and Vomiting Following Non-AC Chemotherapy of High Emetic Risk

A three-drug regimen including single doses of a 5-HT<sub>3</sub> receptor antagonist, dexamethasone, and an NK<sub>1</sub> receptor antagonist (aprepitant, fosaprepitant, netupitant\* or rolapitant), given before chemotherapy is recommended.

MASCC Level of Confidence: High

MASCC Level of Consensus: High

ESMO Level of Evidence: I

ESMO Grade of Recommendation: A

\* Netupitant is administered with palonosetron as part of the fixed-dose combination agent NEPA

For olanzapine, go to 'Committee II slides 5/6 and 6/6'

## COMMITTEE II (2/6):

### Prevention of Delayed Nausea and Vomiting Following Non-AC Chemotherapy of High Emetic Risk

In patients receiving non-AC highly emetogenic chemotherapy treated with a combination of an NK<sub>1</sub> receptor antagonist\*, a 5-HT<sub>3</sub> receptor antagonist, and dexamethasone to prevent acute nausea and vomiting, dexamethasone on days 2 to 4 is suggested to prevent delayed nausea and vomiting.

MASCC Level of Confidence: High

MASCC Level of Consensus: Moderate

ESMO Level of Evidence: I

ESMO Grade of Recommendation: B

\* If aprepitant 125 mg is used in day 1, then dexamethasone 8 mg x 1 (days 2-4) + aprepitant 80 mg x 1 (days 2-3) **OR** dexamethasone 8 mg x 2 (days 2-4) + metoclopramide 20 mg x 4 (days 2-4). Please note that this dosage of metoclopramide derives from a phase III study and some regulatory authorities like EMA now recommend a maximum 0.5 mg/kg total daily dose

For olanzapine, go to 'Committee II slides 5/6 and 6/6'

## COMMITTEE II (3/6):

### Prevention of Acute Nausea and Vomiting Following Anthracycline-Cyclophosphamide-Based Chemotherapy of High Emetic Risk

In women with breast cancer, a three-drug regimen including single doses of a 5-HT<sub>3</sub> receptor antagonist, dexamethasone, and an NK<sub>1</sub> receptor antagonist (aprepitant, fosaprepitant, netupitant\* or rolapitant), given before chemotherapy is recommended.

MASCC Level of Confidence: High

MASCC Level of Consensus: High

ESMO Level of Evidence: I

ESMO Grade of Recommendation: A

\* Netupitant administered with palonosetron as part of the fixed-dose **oral** combination agent NEPA

**NOTE:** If a NK<sub>1</sub> receptor antagonist is not available for AC chemotherapy, palonosetron is the preferred 5-HT<sub>3</sub> receptor antagonist.

For olanzapine, go to 'Committee II slides 5/6 and 6/6'

## COMMITTEE II (4/6):

### Prevention of Delayed Nausea and Vomiting Following Anthracycline-Cyclophosphamide-Based Chemotherapy of High Emetic Risk

In women with breast cancer treated with a combination of a 5-HT<sub>3</sub> receptor antagonist, dexamethasone and a NK<sub>1</sub> receptor antagonist to prevent acute nausea and vomiting, aprepitant or dexamethasone should be used on days 2 and 3 or none if fosaprepitant, netupitant or rolapitant has been used in day 1.

**MASCC Level of Confidence: Moderate**

**MASCC Level of Consensus: Moderate**

**ESMO Level of Evidence: II**

**ESMO Grade of Recommendation: B**

If aprepitant 125 mg is used on day 1, then aprepitant 80 mg x 1 (days 2-3) **OR** dexamethasone 4 mg x 2 (days 2-3).

For olanzapine, go to 'Committee II slides 5/6 and 6/6'

## COMMITTEE II (5/6):

Olanzapine may be considered with a 5-HT<sub>3</sub> receptor antagonist plus dexamethasone, particularly when nausea is an issue.

(**NOTE:** Patient sedation may be a concern for the 10 mg dose of olanzapine. The dose used in studies has mainly been 10 mg. A lower dose may be better tolerated and as effective but further data is needed)

MASCC Level of Confidence : Moderate

MASCC Level of Consensus: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

## COMMITTEE II (6/6):

### Prevention of Acute and Delayed Nausea and Vomiting Following Non-AC and AC Chemotherapy of High Emetic Risk

In patients treated with non-AC highly emetogenic chemotherapy or in women with breast cancer treated with AC chemotherapy olanzapine may be considered with a 5-HT<sub>3</sub> receptor antagonist plus dexamethasone, plus an NK<sub>1</sub> receptor antagonist, particularly when nausea is an issue.

(**NOTE:** Patient sedation may be a concern for the 10 mg dose of olanzapine. The dose used in studies has mainly been 10 mg. A lower dose may be better tolerated and as effective but further data is needed).

**MASCC Level of Confidence : Moderate**

**MASCC Level of Consensus: Moderate**

**ESMO Level of Evidence: II**

**ESMO Grade of Recommendation: B**

## COMMITTEE III (1/3):

### Prevention of Acute Nausea and Vomiting in Moderately Emetogenic Chemotherapy

For the prevention of acute nausea and vomiting in moderately emetogenic chemotherapy-treated patients, a 5-HT<sub>3</sub> receptor antagonist plus dexamethasone is recommended.\*

**MASCC Level of Confidence: Moderate**

**MASCC Level of Consensus: Moderate**

**ESMO Level of Evidence: II**

**ESMO Grade of Recommendation: B**

\* See specific slides for carboplatin recommendation.



## COMMITTEE III (2a/3):

### Prevention of Delayed Nausea and Vomiting in Moderately Emetogenic Chemotherapy

In patients receiving moderately emetogenic chemotherapy with known potential for delayed nausea and vomiting (e.g., oxaliplatin, anthracycline, cyclophosphamide), the use of dexamethasone for days 2 to 3 can be considered.\*

**MASCC Level of Confidence: Low**

**MASCC Level of Consensus: Moderate**

**ESMO Level of Evidence: III**

**ESMO Grade of Recommendation: C**

\* See specific slides for carboplatin recommendation.

## COMMITTEE III (2b/3):

### Prevention of Delayed Nausea and Vomiting in Moderately Emetogenic Chemotherapy

No routine prophylaxis for delayed nausea and vomiting can be recommended for all other patients receiving moderately emetogenic chemotherapy.

MASCC Level of Confidence: No Confidence Possible

MASCC Level of Consensus: High

ESMO Level of Evidence: IV

ESMO Grade of Recommendation: D

\* See specific slides for carboplatin recommendation.

## COMMITTEE III (3a/3):

### Prevention of Acute Nausea and Vomiting in Patients Receiving Carboplatin-Based Chemotherapy

A combination of an NK<sub>1</sub> receptor antagonist, 5-HT<sub>3</sub> receptor antagonist, and dexamethasone is recommended for the prophylaxis of nausea and vomiting induced by carboplatin-based chemotherapy.

MASCC Level of Confidence: Moderate

MASCC Level of Consensus: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

## COMMITTEE III (3b/3):

### Prevention of Delayed Nausea and Vomiting in Patients Receiving Carboplatin-Based Chemotherapy

If aprepitant 125 mg is used on day 1, aprepitant 80 mg on days 2 to 3 is recommended for the prevention of delayed nausea and vomiting. If other NK<sub>1</sub> receptor antagonists are used on day 1, no additional prophylaxis for delayed nausea and vomiting prevention is suggested.

**MASCC Level of Confidence: Moderate**

**MASCC Level of Consensus: Moderate**

**ESMO Level of Evidence: II**

**ESMO Grade of Recommendation: B**

## Recommended Doses of Serotonin Receptor (5-HT<sub>3</sub>) Antagonists for Acute Nausea and Vomiting

AGENT	ROUTE	ANTIEMETICS
Ondansetron	IV	8 mg or 0.15 mg/Kg
	Oral	16 mg*
Granisetron	IV	1 mg or 0.01 mg/Kg
	Oral	2 mg (or 1 mg**)
Dolasetron	Oral	100 mg
Tropisetron	IV	5 mg
	Oral	5 mg
Palonosetron	IV	0.25 mg
	Oral	0.5 mg

\* Randomized studies have tested the 8 mg twice daily schedule.

\*\* The 1 mg dose is preferred by some panelists.

## Recommended Corticosteroid\* (Dexamethasone) Dosing

DEXAMETHASONE		Dose and Schedule
High Risk	- Acute Emesis	20 mg once (12 mg when used with (fos)aprepitant or netupitant)**
	- Delayed Emesis	8 mg bid for 3 - 4 days (8 mg once daily when used with (fos)aprepitant or netupitant)
Moderate Risk	- Acute Emesis	8 mg once
	- Delayed Emesis	8 mg daily for 2 - 3 days (many panelists give the dose as 4 mg bid)
Low Risk	- Acute Emesis	4 - 8 mg once

\* While corticosteroids other than dexamethasone are effective antiemetics, the dose and schedule of dexamethasone coupled with its wide availability in various dose forms established it as the guideline agent of choice.

\*\* The 12 mg dose of dexamethasone is the only one tested with (fos)aprepitant/netupitant in large randomized trials.

## Recommended NK<sub>1</sub> Receptor Antagonist Dosing

NK <sub>1</sub> Receptor Antagonist	Dose and Schedule
APREPITANT* and FOSAPREPITANT - Acute Emesis	Aprepitant: 125 mg once on the day of chemotherapy* - or - Fosaprepitant: 150 mg IV, once on the day of chemotherapy
APREPITANT* and FOSAPREPITANT - Delayed Emesis	Aprepitant 80 mg orally, once daily for the 2 days after chemotherapy; or none if fosaprepitant is used
ROLAPITANT	180 mg orally once on the day of chemotherapy
NETUPITANT	300 mg netupitant/0.5 mg palonosetron orally once on the day of chemotherapy - or - 235 mg fosnetupitant/0.25 mg palonosetron when the intravenous preparation is used

\* aprepitant 165 mg as a single dose before chemotherapy (and none day 2-3) is registered by EMA and other authorities

## COMMITTEE IV (1/3):

### Prevention of Acute Nausea and Vomiting in Patients Receiving Low Emetogenic Chemotherapy

A single antiemetic agent, such as dexamethasone, a 5-HT<sub>3</sub> receptor antagonist, or a dopamine receptor antagonist, such as metoclopramide, may be considered for prophylaxis in patients receiving chemotherapy of low emetic risk.

**MASCC Level of Confidence: Low**

**MASCC Level of Consensus: Moderate**

**ESMO Level of Evidence: II**

**ESMO Grade of Recommendation: B**



## COMMITTEE IV (2/3):

### Prevention of Acute Nausea and Vomiting in Patients Receiving Minimally Emetogenic Chemotherapy\*

No antiemetic should be routinely administered before chemotherapy to patients without a history of nausea and vomiting.

MASCC Level of Confidence: No Confidence Possible

MASCC Level of Consensus: High

ESMO Level of Evidence: IV

ESMO Grade of Recommendation: D

\* While unusual at this emetic level, if a patient experiences nausea or vomiting, it is advised that, with subsequent chemotherapy treatments, the regimen for the next higher emetic level be given.

## COMMITTEE IV (3/3):

### Prevention of Delayed Nausea and Vomiting in Patients Receiving Low or Minimally Emetogenic Chemotherapy\*

No antiemetic should be administered for prevention of delayed nausea and vomiting induced by low or minimally emetogenic chemotherapy.

**MASCC Level of Confidence: No Confidence Possible**

**MASCC Level of Consensus: High**

**ESMO Level of Evidence: IV**

**ESMO Grade of Recommendation: D**

\* While unusual at this emetic level, if a patient experiences nausea or vomiting, it is advised that, with subsequent chemotherapy treatments, the regimen for the next higher emetic level be given.

## COMMITTEE V (1/3):

### Prevention of Nausea and Vomiting in Patients Receiving Multiple-Day Cisplatin

Patients receiving multiple-day cisplatin should receive a 5-HT<sub>3</sub> receptor antagonist plus dexamethasone plus aprepitant for acute nausea and vomiting and dexamethasone for delayed nausea and vomiting.

MASCC Level of Confidence: Moderate

MASCC Level of Consensus: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

**NOTE:** The 5-HT<sub>3</sub> receptor antagonists should be dosed at day 1-5, except for palonosetron, which should be dosed on days 1, 3, and 5 only.

## COMMITTEE V (2/3):

### Prevention of Nausea and Vomiting in Patients Receiving High-Dose Chemotherapy

For patients receiving high-dose chemotherapy for stem cell transplant, a combination of a 5-HT<sub>3</sub> receptor antagonist with dexamethasone and aprepitant (125 mg orally on day 1 and 80 mg orally on days 2 to 4) is recommended before chemotherapy.

MASCC Level of Confidence: High

MASCC Level of Consensus: High

ESMO Level of Evidence: I

ESMO Grade of Recommendation: A

## COMMITTEE V (3/3):

### Guideline for Breakthrough Nausea and Vomiting

The available evidence for breakthrough nausea and vomiting suggests the use of 10 mg oral olanzapine, daily for 3 days.

*(The mild to moderate sedation in this patient population, especially elderly patients, is a potential problem with olanzapine.)*

MASCC Level of Confidence: Moderate

MASCC Level of Consensus: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

**NOTE:** No guideline was felt to be appropriate for refractory nausea and vomiting.

## COMMITTEE VI (1/2):

### Prevention of Anticipatory Nausea and Vomiting

The best approach for the prevention of anticipatory nausea and vomiting is the best possible control of acute and delayed nausea and vomiting.

MASCC Level of Confidence: High

MASCC Level of Consensus: High

ESMO Level of Evidence: III

ESMO Grade of Recommendation: A

## COMMITTEE VI (2/2):

### Prevention of Anticipatory Nausea and Vomiting

Behavioral therapies (progressive muscle relaxation training, in particular), systematic desensitization, and hypnosis may be used to treat anticipatory nausea and vomiting.

MASCC Level of Confidence: Moderate

MASCC Level of Consensus: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

Benzodiazepines can reduce the occurrence of anticipatory nausea and vomiting.

MASCC Level of Confidence: Moderate

MASCC Level of Consensus: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: A

## Committee VII (1/5): Levels of Emetic Risk with Radiation Therapy

RISK LEVEL*	AREA OF TREATMENT
HIGH	Total body irradiation
MODERATE	Upper abdomen, craniospinal
LOW	Cranium, head & neck, thorax region, pelvis
MINIMAL	Extremities, breast

\* In concomitant radiochemotherapy the antiemetic prophylaxis is according to the chemotherapy-related antiemetic guidelines of the corresponding risk category, unless the risk of emesis is higher with radiotherapy than chemotherapy



## COMMITTEE VII (2/5):

### Prevention of Nausea and Vomiting in Patients Receiving Highly Emetic Radiation Therapy: Total Body Irradiation

Patients receiving highly emetic radiation therapy should receive a 5-HT<sub>3</sub> receptor antagonist plus dexamethasone.

**MASCC Level of Confidence: High**

*(For the addition of dexamethasone: Moderate)*

**MASCC Level of Consensus: High**

**ESMO Level of Evidence: II**

*(For the addition of dexamethasone: III)*

**ESMO Grade of Recommendation: B**

*(For the addition of dexamethasone: C)*

## COMMITTEE VII (3/5):

### Prevention of Nausea and Vomiting in Patients Receiving Moderately Emetic Radiation Therapy: Upper Abdomen, Craniospinal

Patients receiving moderately emetic radiation therapy should receive a 5-HT<sub>3</sub> receptor antagonist and optional short-course dexamethasone.

**MASCC Level of Confidence: High**

*(For the addition of dexamethasone: Moderate)*

**MASCC Level of Consensus: High**

**ESMO Level of Evidence: II**

**ESMO Grade of Recommendation: A**

*(For the addition of dexamethasone: B)*

## COMMITTEE VII (4/5):

### Prevention of Nausea and Vomiting in Patients Receiving Low Emetic Radiation Therapy: Cranium, Head & Neck, Thorax Region, Pelvis

Patients receiving cranial radiation therapy should receive prophylaxis or rescue with dexamethasone. Patients receiving radiation therapy to head & neck, thorax region, or pelvic sites should receive prophylaxis or rescue with dexamethasone, a dopamine receptor antagonist, or a 5-HT<sub>3</sub> receptor antagonist.

MASCC Level of Confidence: Low

MASCC Level of Consensus: High

ESMO Level of Evidence: IV

ESMO grade of recommendation: D

## COMMITTEE VII (5/5):

### Guideline for the Prevention of Nausea and Vomiting in Patients Receiving Minimal Emetic Radiation Therapy: Extremities, Breast

Patients receiving minimal emetic radiation therapy should receive rescue with dexamethasone, a dopamine receptor antagonist, or a 5-HT<sub>3</sub> receptor antagonist.

MASCC Level of Confidence: Low

MASCC Level of Consensus: High

ESMO Level of Evidence: IV

ESMO Grade of Recommendation: D

# COMMITTEE VIII (1a/4): Antiemetics in Children

## Prevention of Nausea and Vomiting Following Chemotherapy of High Emetic Risk in Children

Children receiving chemotherapy of high emetic risk should receive antiemetic prophylaxis with a 5-HT<sub>3</sub> receptor antagonist plus dexamethasone plus aprepitant.

MASCC Level of Consensus: High

MASCC Level of Confidence: High

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

## COMMITTEE VIII (1b/4): Antiemetics in Children

### Prevention of Nausea and Vomiting Following Chemotherapy of High Emetic Risk in Children

Children who cannot receive dexamethasone should receive a 5-HT<sub>3</sub> receptor antagonist plus aprepitant.

MASCC Level of Consensus: High

MASCC Level of Confidence: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

Children who cannot receive aprepitant should receive a 5-HT<sub>3</sub> receptor antagonist plus dexamethasone.

MASCC Level of Consensus: High

MASCC Level of Confidence: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

## COMMITTEE VIII (2/4): Antiemetics in Children

### Prevention of Nausea and Vomiting Following Chemotherapy of Moderate Emetic Risk in Children

Children receiving moderately emetogenic chemotherapy should receive antiemetic prophylaxis with a 5-HT<sub>3</sub> receptor antagonist plus dexamethasone.

MASCC Level of Consensus: High

MASCC Level of Confidence: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

Children who cannot receive dexamethasone should receive a 5-HT<sub>3</sub> receptor antagonist and aprepitant.

MASCC Level of Consensus: High

MASCC Level of Confidence: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B

# COMMITTEE VIII (3/4): Antiemetics in Children

## Prevention of Nausea and Vomiting Following Chemotherapy of Low Emetic Risk in Children

Children receiving chemotherapy of low emetogenicity should receive antiemetic prophylaxis with a 5-HT<sub>3</sub> receptor antagonist.

MASCC Level of Consensus: Moderate

MASCC Level of Confidence: Moderate

ESMO Level of Evidence: II

ESMO Grade of Recommendation: B



# COMMITTEE VIII (4/4): Antiemetics in Children

## Prevention of Nausea and Vomiting Following Chemotherapy of Minimal Emetic Risk in Children

Children receiving chemotherapy of minimal emetogenicity should receive no antiemetic prophylaxis.

MASCC Level of Consensus: High

MASCC Level of Confidence: Moderate

ESMO Level of Evidence: V

ESMO Grade of Recommendation: D

# COMMITTEE IX (1a/3): Advanced Cancer

## Treatment of Nausea and Vomiting in Advanced Cancer: Drugs of Choice

The antiemetic drug of choice in advanced cancer is metoclopramide (titrated to effect).

MASCC Level of Consensus: High

MASCC Level of Confidence: Moderate

ESMO Level of Evidence: III

ESMO Grade of Recommendation: C

## COMMITTEE IX (1b/3): Advanced Cancer

### Treatment of Nausea and Vomiting in Advanced Cancer: Drugs of Choice

Alternative options include haloperidol, levomepromazine, or olanzapine.

MASCC Level of Consensus: High

MASCC Level of Confidence: Low

ESMO Level of Evidence: V

ESMO Grade of Recommendation: D

The use of cyclizine or 5-HT<sub>3</sub> receptor antagonists is poorly defined to date and may be used when dopamine antagonists are contraindicated or ineffective.

MASCC Level of Consensus: Low

MASCC Level of Confidence: Low

ESMO Level of Evidence: V

ESMO Grade of Recommendation: D

**NOTE:** The evidence to support combinations of drugs with antiemetic effect and different mechanisms of action is minimal (except in bowel obstruction)

## COMMITTEE IX (2a/3): Advanced Cancer

### Treatment of Nausea and Vomiting in Advanced Cancer: Bowel Obstruction

The drug recommended in bowel obstruction is octreotide, dosed around the clock, and given alongside a conventional antiemetic (with the committee recommending haloperidol).

MASCC Level of Consensus: High

MASCC Level of Confidence: High

ESMO Level of Evidence: II

ESMO Grade of Recommendation: A

If octreotide plus antiemetic is suboptimal, the use of anticholinergic anti-secretory agents (e.g. scopolamine butylbromide, glycopyrronium bromide) and/or corticosteroids is recommended as either adjunct / alternative interventions.

MASCC Level of Consensus: High (*Moderate for corticosteroids*)

MASCC Level of Confidence: Moderate (*Low for corticosteroids*)

ESMO Level of Evidence: IV

ESMO Grade of Recommendation: D

## COMMITTEE IX (2b/3): Advanced Cancer

### Treatment of Nausea and Vomiting in Advanced Cancer: Bowel Obstruction

The use of cyclizine\* or 5HT<sub>3</sub> receptor antagonists is poorly defined in this setting\*\*. Metoclopramide should be used with caution in partial bowel obstruction and should not be used in complete bowel obstruction.

MASCC Level of Consensus: Low

MASCC Level of Confidence: Low

ESMO Level of Evidence: V

ESMO Grade of Recommendation: D

\* Unavailable in some countries.

\*\* Caution should be exercised because of the risk of drug interactions.

## COMMITTEE IX (3/3): Advanced Cancer

### Treatment of Nausea and Vomiting in Advanced Cancer: Opioid-induced Emesis

No recommendation can be made about specific antiemetics, although various antiemetics may help. Opioid rotation and route switching may be effective approaches. There is no data to support prophylactic antiemetics in this situation.

**MASCC Level of Consensus: High**

**MASCC Level of Confidence: Low**

**ESMO Level of Evidence: V**

**ESMO Grade of Recommendation: D**



# MASCC/ESMO ANTIEMETIC GUIDELINES

With Updates in 2019

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