

What to Know

ASCO's Guideline on Preventing Vomiting Caused by Cancer Treatment

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KEY MESSAGES

- The risk of nausea and vomiting depends on the specific chemotherapy and the type and location of radiation therapy you receive.
- With appropriate medications, vomiting can be prevented in most patients undergoing cancer treatment.

To help doctors give their patients the best possible care, the American Society of Clinical Oncology (ASCO) developed evidence-based recommendations on the use of antiemetics (drugs that prevent vomiting). These guidelines were updated in 2011 because the latest research showed better prevention of vomiting with new combinations of medications and some additional medications became available. This guide for patients receiving any type of chemotherapy or radiation therapy is based on these updated ASCO recommendations.

BACKGROUND

Emesis (vomiting or throwing up) is the act of expelling the contents of the stomach through the mouth. Nausea is the urge to vomit. Radiation therapy (the use of high-energy x-rays or other particles to kill cancer cells) and some types of chemotherapy (the use of drugs to kill cancer cells) cause nausea and vomiting, although not all patients who receive these treatments will have these side effects. Patients who often have motion sickness or have vomited after previous chemotherapy treatment are more likely to experience nausea and vomiting.

The best way to manage nausea and vomiting caused by cancer treatment is to prevent it. Fortunately, many medications are available that can prevent vomiting. These medications may also prevent nausea, but some patients may still have nausea even if they do not have vomiting. More research is needed to understand if these drugs prevent nausea.

Anticipatory emesis is vomiting that occurs before treatment in patients who have previously felt nauseous or vomited after chemotherapy. The prevention and treatment of anticipatory vomiting depends on the patient. Tell your doctor if you

have experienced vomiting with previous chemotherapy treatment. Your doctor may be able to recommend medication or behavioral therapy to help reduce vomiting.

RECOMMENDATIONS FOR PREVENTING VOMITING CAUSED BY CHEMOTHERAPY

Some chemotherapy is more likely to cause nausea and vomiting than other chemotherapy. The table (Table 1) below lists the likelihood that a certain intravenous (IV; given in a vein) chemotherapy will cause nausea and vomiting.

Table 1. The Risk of Nausea and Vomiting From Intravenous Chemotherapy

Nearly Always Causes Nausea and Vomiting (High Risk)	Usually Causes Nausea and Vomiting (Moderate Risk)	Sometimes Causes Nausea and Vomiting (Low Risk)	Rarely Causes Nausea and Vomiting (Minimal Risk)
Carmustine (<i>Becenum, BiCNU, Carmubris</i>)	Azacitadine (<i>Mylosar, Vidaza</i>)	Bortezomib (<i>Velcade</i>)	Bevacizumab (<i>Avastin</i>)
Cisplatin (<i>Platinol</i>)	Alemtuzumab (<i>Campath</i>)	Cabazitaxel (<i>Jevtana</i>)	Bleomycin (<i>Blenoxane</i>)
Cyclophosphamide (<i>Cytoxan, Clafen, Neosar</i>) at higher doses	Bendamustine (<i>Treanda</i>)	Catumaxumab (<i>Removab</i>)	Busulfan (<i>Busulfex, Mitozan, Myleran</i>)
Dacarbazine (<i>DTIC-Dome</i>)	Carboplatin (<i>Paraplat, Paraplatin</i>)	Cytarabine at lower doses	Cetuximab (<i>Erbix</i>)
Dactinomycin (<i>Cosmegen, Lyovac Cosmegen</i>)	Clofarabine (<i>Clofarex, Clolar</i>)	Docetaxel (<i>Taxotere</i>)	2-Chlorodeoxyadenosine (<i>Cladribine, Leustatin</i>)
Daunorubicin (<i>Cerubidine, Rubidomycin</i>) when combined with cyclophosphamide	Cyclophosphamide at lower doses	Doxorubicin HCL liposome injection (<i>Doxil, Dox-SL, Evacet, LipoDox</i>)	Fludarabine (<i>Fludara</i>)
Doxorubicin (<i>Adriamycin</i>) when combined with cyclophosphamide	Cytarabine (<i>Cytosar-U, Tarabine PFS</i>) at higher doses	Etoposide (<i>Etopophus, Toposar, VePesid</i>)	Pralatrexate (<i>Foloty</i>)
Epirubicin (<i>Ellence</i>) when combined with cyclophosphamide	Daunorubicin	Fluorouracil (<i>5-FU, Adrucil, Efudex, Fluoroplex</i>)	Rituximab (<i>Rituxan</i>)
Idarubicin (<i>Idamycin</i>) when combined with cyclophosphamide	Doxorubicin	Gemcitabine (<i>Gemzar</i>)	Vinblastine (<i>Velban, Velsar</i>)
Mechlorethamine (<i>Mustargen</i>)	Epirubicin	Ixabepilone (<i>Ixempra</i>)	Vincristine (<i>Vincasar PFS, Oncovin</i>)
Streptozotocin (<i>Zanosar</i>)	Idarubicin	Methotrexate (<i>multiple brand names</i>)	Vinorelbine (<i>Navelbine, Alocrest</i>)
	Ifosfamide (<i>Cyfos, Ifex, Ifosfamidum</i>)	Mitomycin (<i>Mitozytrex, Mutamycin</i>)	
	Irinotecan (<i>Camptosar</i>)	Mitoxantrone (<i>Novantrone</i>)	
	Oxaliplatin (<i>Eloxatin</i>)	Paclitaxel (<i>Taxol, Abraxane</i>)	
		Panitumumab (<i>Vectibix</i>)	
		Pemetrexed (<i>Alimta</i>)	
		Temsirolimus (<i>Torisel</i>)	
		Topotecan (<i>Hycamtin, Brakiva</i>)	
		Trastuzumab (<i>Herceptin</i>)	

The recommended treatments for preventing nausea and vomiting are listed in Table 2.

Table 2. Recommendations for Preventing Vomiting Caused by Chemotherapy

Likelihood of Chemotherapy to Cause Nausea and Vomiting	Nearly Always Causes Nausea and Vomiting (High Risk and AC Chemotherapy)	Usually Causes Nausea and Vomiting (Moderate Risk)	Sometimes Causes Nausea and Vomiting (Low Risk)	Rarely Causes Nausea and Vomiting (Minimal Risk)
Recommended Treatment	<p>A three-drug combination of the following:</p> <ol style="list-style-type: none"> 1. Aprepitant (<i>Emend</i>) on days 2 and 3 or fosaprepitant on day 1 2. Dolasetron (<i>Anzemet; oral [by mouth] form only</i>), granisetron (<i>Kytril, Sancuso</i>), ondansetron (<i>Zofran</i>), palonosetron (<i>Aloxi</i>), tropisetron (<i>Navoban</i>), or ramosetron (<i>Nasea</i>) 3. Dexamethasone (<i>multiple brand names</i>) on days 2 through 4 	<p>A two-drug combination of the following:</p> <ol style="list-style-type: none"> 1. Palonosetron (this is the preferred treatment, but granisetron or ondansetron may also be used) 2. Dexamethasone on days 2 and 3 	Dexamethasone	No treatment required unless the patient has previously experienced vomiting with this treatment.

RECOMMENDATIONS FOR PREVENTING VOMITING CAUSED BY RADIATION THERAPY

The risk that radiation therapy will cause nausea and vomiting depends on where the radiation therapy is targeted and how much of the body is receiving treatment. The risks and recommended treatments of vomiting caused by radiation therapy are summarized in Table 3.

Table 3. Recommendations for Preventing Vomiting Caused by Radiation Therapy

Risk of Nausea and Vomiting From Radiation	Area of the Body Being Treated	Recommended Treatment
High	Total body irradiation (entire body) or total nodal (lymph node) irradiation	One of these drugs: granisetron or ondansetron (preferred) or dolasetron, tropisetron, or palonosetron before each dose and after the last, with dexamethasone before treatments 1 through 5
Moderate	Upper abdomen (trunk or stomach), upper body, or half of the body	One of these drugs: granisetron or ondansetron (preferred) or dolasetron, tropisetron, or palonosetron before each treatment with dexamethasone before treatments 1 through 5
Low	Lower thorax (chest) Pelvis (lower abdomen) Brain Spinal cord (back) Head and neck	One of these drugs: granisetron or ondansetron (preferred) or dolasetron, tropisetron, or palonosetron as needed
Minimal	Arms and legs Breast	One of these drugs: granisetron or ondansetron (preferred) or dolasetron, tropisetron, or palonosetron and metoclopramide (<i>Reglan</i>) or prochlorperazine (<i>Compazine</i>) as needed

WHAT THIS MEANS FOR PATIENTS

Vomiting can be prevented with the appropriate medications for most patients undergoing cancer treatment. However, patients may still have nausea without vomiting. These medications should be taken as prescribed before treatment and continued after treatment as directed by your doctor because the risk of vomiting may continue for several days after treatment.

If you have nausea and vomiting, even if you take your medication as prescribed, let your doctor know. Your doctor can recommend other medications to reduce nausea and vomiting and help prevent these symptoms during future cycles of chemotherapy. It is very important to call or see your doctor if you cannot keep food or water in your body because of severe nausea and vomiting. This can cause serious dehydration and electrolyte imbalance. It is also important to talk to your doctor if your symptoms worsen throughout treatment.

HELPFUL LINKS

Read the entire clinical practice guideline published at www.asco.org/guidelines/antiemetics.

Nausea and Vomiting
www.cancer.net/sideeffects

ABOUT ASCO'S GUIDELINES

To help doctors give their patients the best possible care, ASCO asks its medical experts to develop evidence-based recommendations for specific areas of cancer care, called clinical practice guidelines. Due to the rapid flow of scientific information in oncology, new evidence may have emerged since the time a guideline or assessment was submitted for publication. As a result, guidelines and guideline summaries, like this one, may not reflect the most recent evidence. Because the treatment options for every patient are different, guidelines are voluntary and are not meant to replace your physician's independent judgment. The decisions you and your doctor make will be

QUESTIONS TO ASK THE DOCTOR

It is important to prevent vomiting before it occurs. Consider asking the following questions of your doctor:

- Does my treatment carry a high risk of nausea and vomiting?
- What can be done to prevent vomiting?
- What can be done to manage nausea?
- Are some medications preferred over others? Why?
- What are the instructions for taking these medications?
- Do these medications have side effects that I should know about?
- What are the costs of these medications?
- If I'm worried about managing the costs related to my cancer care, who can help me with these concerns?
- Where can I find more information?

based on your individual circumstances. These recommendations may not apply in the context of clinical trials.

The information in this patient guide is not intended as medical or legal advice, or as a substitute for consultation with a physician or other licensed health care provider. Patients with health-related questions should call or see their physician or other health care provider promptly and should not disregard professional medical advice, or delay seeking it, because of information encountered in this guide. The mention of any product, service, or treatment in this guide should not be construed as an ASCO endorsement. ASCO is not responsible for any injury or damage to persons or property arising out of or related to any use of this patient guide, or to any errors or omissions.

RESOURCES

The best cancer care starts with the best cancer information. Well-informed patients are their own best advocates, and invaluable partners for physicians. Cancer.Net (www.cancer.net) brings the expertise and resources of ASCO, the voice of the world's cancer physicians, to people living with cancer and those who care for and care about them. ASCO is composed of more than 30,000 members who are the leaders in advancing cancer care. All the information and content on Cancer.Net was developed and approved by the cancer doctors who are members of ASCO, making Cancer.Net an up-to-date and trusted resource for cancer information on the Internet. Visit Cancer.Net to find guides on more than 120 types of cancer and cancer-related syndromes, clinical trials information, coping resources, information on managing side effects, medical illustrations, cancer information in Spanish, videos, podcasts, the latest cancer news, and much more. For more information about ASCO's patient information resources, call toll free 888-651-3038.



American Society of Clinical Oncology

2318 Mill Rd., Ste. 800 • Alexandria, VA 22314 • Phone: 571-483-1300

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