



Managing Side Effects

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Edited by

Charles L. Loprinzi, MD

The Mayo Clinic
Rochester, Minnesota

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Chemotherapy, radiation, and other cancer treatments cause different types of side effects. Not everyone experiences these side effects, and each person who does experience them reacts differently. Among the side effects we cover in this chapter are hot flashes, nausea and vomiting, dry mouth, low blood cell counts, nerve damage, and skin rash. Fortunately, doctors have some ways to reduce and even prevent many of these side effects. There are also effective ways to help patients care for their bone health and address fertility issues raised by cancer treatment, also discussed below.

Hot Flashes

Pregabalin (Lyrica), a medication to treat seizures and pain, may also be an effective way to treat hot flashes.

Up to 80 percent of women in the United States experience hot flashes, either as they approach menopause or as a result of cancer treatment. These sudden feelings of body heat occur when hormonal changes affect the part of the brain that regulates the body's temperature.

The anti-seizure medication gabapentin (Neurontin and others) has shown encouraging results as a possible treatment for hot flashes. In a recent clinical trial, researchers tested a drug similar to gabapentin—pregabalin (Lyrica)—in more than 100 women who had at least 28 hot flashes a week for at least one month. The hope was that pregabalin would work even better than gabapentin and/or cause fewer side effects.

After six weeks of treatment with pregabalin, about 70 percent of the women were satisfied with the control of their hot flashes. Two doses of the drug were tried, and both effectively decreased the number of hot flashes. The lower dose caused fewer side effects, such as constipation, mood changes, and muscle pain. Researchers concluded that the lower dose of pregabalin is an effective and safe way to treat hot flashes. The results from this clinical trial are similar to what researchers have found with gabapentin.

Nausea and Vomiting

Ginger supplements added to anti-nausea drugs appear to reduce nausea caused by chemotherapy.

As many as 70 percent of people who receive chemotherapy experience nausea and vomiting. Anti-nausea drugs are often prescribed to help these patients. Now, researchers have found that adding ginger supplements to standard anti-nausea drugs may also help to treat this side effect.

More than 600 people being treated for cancer took part in a clinical trial to test the value of ginger in managing nausea caused by chemotherapy. Nearly 70 percent of these patients were receiving chemotherapy for breast cancer.

All of the patients received a standard anti-nausea drug, either ondansetron (Zofran and others) or granisetron (Kytril and others), on the first day of each chemotherapy cycle. Some of the clinical trial participants also were given ginger supplements.

On the day they received chemotherapy, the patients who received ginger supplements reported less nausea from chemotherapy than those who took a placebo (a look-alike pill containing no active ingredient). However, ginger did not



reduce vomiting. And there is no evidence that ginger reduces nausea on the days following chemotherapy.

As with the use of all supplements, patients should speak with their doctor before taking ginger. Researchers do not yet know whether ginger-containing foods such as gingersnap

cookies or ginger ale, which have long been used as home remedies for an upset stomach, can offer the same benefits as the ginger supplements used in this clinical trial.

Palonosetron (Aloxi) given on alternate days may effectively reduce nausea and vomiting caused by cancer treatment.

A treatment called biochemotherapy can help shrink tumors in people who have a type of skin cancer known as metastatic melanoma. This treatment combines standard chemotherapy drugs like cisplatin (Platinol and others) and vinblastine (Velban and others) with immunotherapy. (Immunotherapy is a treatment used to try to strengthen the ability of the body's immune system to fight infection and disease.) Although biochemotherapy appears to benefit some patients, it also causes severe nausea and vomiting in about one-quarter of the people who receive it. Therefore, doctors are searching for ways to treat these side effects.

Thirty people with metastatic melanoma took part in a small clinical trial to study palonosetron, a relatively new treatment

for nausea and vomiting. These patients were receiving biochemotherapy for the first time for their metastatic cancer. Half of them received palonosetron before their biochemotherapy on days one and four. The others received palonosetron on alternating days of treatment (days one, three, and five).

Those who received palonosetron on alternating days had fewer episodes of nausea and vomiting than those who received treatment on days one and four. The patients who received the alternating treatment had fewer complaints about nausea interfering with their appetite, sleep, physical activity, and social lives.

Dry Mouth

A special type of radiation treatment may help prevent dryness of the mouth in people being treated for head and neck cancer.

Radiation is an effective treatment for people who have head and neck cancer. However, many of these patients experience a side effect known as xerostomia—dryness of the mouth. This problem can lead to difficulty in speaking, swallowing, and tasting, as well as tooth decay. Researchers now report that a special type of radiation treatment may be a useful way to manage this side effect.

Intensity-modulated radiation therapy (IMRT) is a treatment that delivers radiation more precisely to the tumor while reducing the damage to nearby healthy tissue. It does this by using computers to create exact 3-D images of the tumor so thin beams of radiation can be aimed directly at the tumor from many angles. IMRT can be used to treat head and neck cancer to avoid harming the largest salivary gland (the parotid gland), which makes saliva and releases it into the mouth.

Nearly 100 people with head and neck cancer took part in a clinical trial comparing standard radiation treatment

with IMRT to see which was more effective in reducing dry mouth. Half of the patients were treated with standard radiation. The others received IMRT.

IMRT reduced the risk of dry mouth by about 50 percent. Eighteen months after treatment, more than 70 percent of those treated with standard radiation complained of dryness of the mouth, compared with only about 30 percent of those treated with IMRT.

Researchers are extremely encouraged by these early results and plan further clinical trials of this treatment to learn how best to use it.

Low Blood Cell Counts

Bexarotene (Targretin), a drug used to treat certain blood cancers, may also improve blood cell counts.

Many types of chemotherapy can lead to low blood cell counts, which may cause symptoms such as fatigue due to a low number of red blood cells, an increased risk of infection due to a low white blood cell count, or bleeding due to a low number of platelets. Platelets are blood cells that form clots to help wounds heal and prevent bleeding. Researchers may have found an effective way to treat low platelet counts.

Bexarotene (Targretin) is a medication used to treat skin problems caused by a blood cancer known as cutaneous T-cell lymphoma. It is also being studied as a treatment for other cancers, such as lung cancer and leukemia.

For this study, researchers analyzed the platelet counts of patients who had taken part in three previous studies that had used bexarotene to treat lung cancer or leukemia. They found that more people being treated with bexarotene had an increase in their platelet counts than those who had not been treated with this medication.

If researchers can find a way to prevent decreases in blood cell counts, many patients will be better able to tolerate their cancer treatment. Researchers plan to continue studying bexarotene to find out whether they can confirm these promising results.

Nerve Damage

The antidepressant drug venlafaxine (Effexor and others) may offer relief from nerve problems caused by the cancer drug oxaliplatin (Eloxatin and others).

The cancer drug oxaliplatin (Eloxatin and others) is widely used to treat colorectal cancer. However, it can cause symptoms of nerve damage such as pain, tingling, weakness, or numbness, particularly in the hands and feet. After treatment with oxaliplatin, such symptoms may be temporary (acute) or may persist for longer periods of time (chronic).

Nearly 50 people who were receiving chemotherapy that included oxaliplatin took part in a clinical trial. All of these patients had acute nerve problems as a result of treatment with oxaliplatin. About half of them were given the antidepressant drug venlafaxine (Effexor and others). The others were given a placebo.

Of those taking venlafaxine:

- Thirty percent had complete relief from their nerve symptoms;
- Nearly 70 percent had at least 50 percent relief;
- Three months after treatment, none of the people had severe chronic nerve problems.

Of those who received a placebo:

- Five percent had complete relief from their nerve symptoms;

- Less than 30 percent had at least 50 percent relief;
- Three months after treatment, more than 30 percent had severe chronic nerve problems.

The results of this clinical trial suggest that taking venlafaxine may be a very effective way to treat nerve damage. Ongoing research is trying to confirm the promising results from this small clinical trial.

Skin Rash

Skin care with a moisturizer and an antibiotic may reduce rash in people treated with a certain type of targeted treatment.

Panitumumab (Vectibix) and cetuximab (Erbix) belong to a class of drugs called epidermal growth factor receptor (EGFR) inhibitors. The drugs are designed to bind up, or block, certain receptors on cancer cells. Receptors are found on the surface of cells and serve as doorways for specific molecules to enter a cell to help it function or grow. EGFR inhibitors prevent a substance called epidermal growth factor from entering a cell and helping it grow into a tumor.

EGFR inhibitors have been approved by the U. S. Food and Drug Administration as treatments for colorectal, lung, and head and neck cancers. They are being studied for their effectiveness against other cancers as well. However, EGFR inhibitors often cause an acne-like skin rash. About 90 percent of people taking panitumumab and 75 percent of those taking cetuximab develop this rash. In some cases, this rash may prevent patients from taking these drugs as instructed, reducing the effectiveness of cancer treatment.

A new study suggests that people who receive preventive skin care while being treated with panitumumab may be less likely to have a rash than people who do not receive skin care treatment until the rash develops. The skin care tested

included a moisturizer, sunscreen, hydrocortisone cream (to reduce the inflammation), and an antibiotic.

Ninety-five patients with metastatic colorectal cancer took part in the clinical trial. Half of them received skin care for six weeks, starting 24 hours before taking panitumumab. The others received skin care only if they developed a rash.

Of those who received preventive skin care, 29 percent developed a rash, compared with 62 percent of those who did not. Patients who used the skin care products before they developed a rash also reported feeling better about their appearance and being more physically comfortable.

Although cetuximab was not involved in this study, researchers suggested

that preventive skin care treatment might benefit patients receiving cetuximab as well. Doctors would like this skin care treatment to be studied further as a way of decreasing rashes from treatment with EGFR inhibitors.



Bone Health and Cancer Treatment

Denosumab appears to strengthen bones in people being treated for breast or prostate cancer.

The female hormone estrogen fuels the growth of some types of breast cancer. Women diagnosed with these types of cancer are being treated with medications that block the body's production of estrogen. However, as a result of this treatment, some women may experience bone loss and an increase in the risk of bone breaks (fractures).

In the same way, men with prostate cancer may experience bone loss and an increased risk of fractures. The male hormone testosterone fuels the growth of prostate tumors, and male patients are often given medications aimed at stopping the body's production of this hormone.

A clinical trial included more than 250 women with breast cancer being treated with drugs designed to block estrogen production. Some of the women also received denosumab, and the others did not. A second study included nearly 1,500 men with prostate cancer being treated with hormone therapy. Again, some of these men also received denosumab, and the others did not.

Two years after treatment, researchers checked the bone mineral density (BMD) of the lower back, the hip, and the wrist in all the participants in both clinical trials. The BMD test measures the strength and health of bones through the density of their calcium and other minerals. The higher the BMD, the stronger the bone. Researchers found that BMD increased in both the women and the men who were given denosumab, compared with those who did not receive the drug.



Thus, these two studies seem to show that denosumab may help prevent bone loss and possible fractures in both groups of patients.

Fertility and Cancer Treatment

People with cancer who are of childbearing age should talk with their doctors about ways to preserve fertility.

Many cancer treatments can affect a person's ability to have or carry children. So it is extremely important for people of childbearing age who are or will be going through cancer treatment to talk with their doctors about possible options for preserving fertility. A recent survey suggests that doctors could do a better job of counseling their cancer patients about such options.

More than 600 oncologists took part in a survey about how they discuss fertility preservation with their patients who are of childbearing age. Most of the doctors said they do discuss such options with their patients. However, only a quarter of them provided educational materials to their patients or referred them to fertility specialists.

The survey also found that doctors with favorable attitudes toward fertility preservation were about five times more likely to have such a discussion than doctors with unfavorable attitudes. Doctors gave several reasons why they were not providing adequate counseling: their patients were very ill, fertility preservation treatments are expensive, and the doctors lacked enough time to have these discussions.

Still, learning about fertility preservation options is a patient's right, and researchers agreed that better training programs for both doctors and nurses are needed to improve the communication between health care providers and their patients with cancer.

Please note: *Although the treatments discussed in this chapter are showing promise, most are still in clinical trials—some in earlier phases of research—and may not be available yet to the general public. Your doctor can help guide you as to which new medications could be right for you and whether you are eligible to take part in the clinical trials of these new treatments.*