Olanzapine Reduces Nausea and Vomiting Caused by Advanced Cancer

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Scientists think they may have found a promising treatment for people with advanced cancer who have nausea and vomiting not caused by chemotherapy. In a small NCI-funded study, treatment with olanzapine (Zyprexa) greatly reduced cancer patients' nausea and vomiting compared with a placebo.

Many people with advanced cancer experience chronic nausea and vomiting that can make it difficult to eat and can lessen their overall well-being. Treatments for nausea and vomiting caused by something other than chemotherapy, such as the cancer itself, haven't been well studied.

But the new study suggests that olanzapine may fill this need for patients with advanced cancer.

"There was a dramatic reduction [in nausea and vomiting] within 24 hours in the people who received olanzapine, and it lasted for the entire week that patients were formally studied," said one of the study's investigators, Charles Loprinzi, MD, of the Mayo Clinic in Rochester, Minnesota.

"The results are quite impressive," said Diane St. Germain, RN, MS, of NCI's Division of Cancer Prevention, who wasn't involved in the study. Although the study was small, it shows that olanzapine has promise and "definitely indicates that a larger study is needed," she added.

The study findings, published May 7 in JAMA Oncology, also show that olanzapine caused very few side effects.

"It's a really unique situation to have a drug that is so effective with minimal side effects," St. Germain said. "It's so important that [advanced cancer patients] are able to have control of their symptoms to enhance their quality of life."

Olanzapine is an antipsychotic medication that is mainly used to treat schizophrenia, bipolar disorder, and depression. It is also used off-label to prevent nausea and vomiting caused by chemotherapy.

There were hints from a few pilot studies and case reports that olanzapine may also work to ease

nausea and vomiting in patients with advanced cancer that is unrelated to chemotherapy, but experts agreed that more rigorous studies were needed.

Nausea and Vomiting Not Caused by Chemotherapy

Thirty people with incurable cancer and chronic nausea enrolled in the new study. None had received chemotherapy or radiation therapy in the 2 weeks prior to enrolling, or antipsychotic medications in the 30 days prior to enrolling.

The study included people with different types of cancer and with different causes of nausea such as the cancer itself, a partial bowel obstruction, or opioid medications.

The participants were randomly assigned to take either olanzapine or a placebo for 1 week. The study was double blinded, meaning neither the patients nor any research staff who interacted with the patients knew which treatment they were getting.

Before treatment began, each patient rated the intensity of their nausea, fatigue, sedation, appetite, and pain. They scored each symptom on a scale of 0 to 10, with 10 representing the highest intensity. After treatment started, they repeated the evaluation of their symptoms daily for a week.

Before treatment began, the median nausea score for all participants was 9 out of 10. These "patients had really significant nausea and vomiting. These were patients who were clearly struggling," St. Germain said.

For those in the placebo group, the median nausea score didn't change after 1 day or after 1 week of treatment. But for those in the olanzapine group, the median nausea score dropped to 2 after the first day of treatment and to 1 after a week.

Before beginning treatment, patients in both groups reported vomiting two to three times a day. During the treatment, patients in the placebo group continued to vomit at the same rate, while those in the olanzapine group reported no vomiting.

It was surprising to see such a large benefit for every patient who took olanzapine, Loprinzi said, noting the varied causes for nausea and vomiting.

Olanzapine May Boost Well-Being

In addition to lessening nausea and vomiting, olanzapine appeared to improve other symptoms.

Compared with patients in the placebo group, those in the olanzapine group reported less frequent use of other antinausea medications. "That's important because if you can address a symptom with just one drug, that's great," St. Germain said.

After a week of treatment, patients in the olanzapine group also reported a greater improvement in appetite compared to those in the placebo group.

Olanzapine is known to stimulate appetite, and people with mood disorders who take it for months at a time can gain unwanted weight—sometimes 20 to 40 pounds, Loprinzi explained. But for patients with advanced cancer and chronic nausea, an increase in appetite is generally a good thing, he said.

Olanzapine can also cause fatigue or sedation. However, in this study, patients who took olanzapine reported feeling less fatigue and sedation than those who received a placebo. “We think that’s because they didn’t need to take other antinausea medications, which can cause drowsiness,” Loprinzi said.

And, overall, patients who took olanzapine reported better well-being than those in the placebo group.

The study was designed to last 1 week. But after it ended, almost all of the patients in both treatment groups opted to take olanzapine via prescriptions from their doctors. Some patients took olanzapine for an additional 4 months.

The patients’ doctors reported that, during the additional treatment time, olanzapine continued to be effective and caused few or no side effects. In general, patients stopped the treatment when their cancer got worse, they were unable to swallow pills, or they died.

Loprinzi and his colleagues are designing a trial that will further explore longer-term effects of olanzapine.

Potentially More Effective and More Affordable

Of the few medications that are used to treat nausea and vomiting not caused by chemotherapy, “none of them seem to be close in terms of the benefit that we saw in this trial,” Loprinzi said. But there haven’t been many studies of those other medications either, he added.

Olanzapine is not approved by the Food and Drug Administration for nausea and vomiting. But “in the palliative care setting, and in oncology in general, there are medications that are used [off-label] for other indications,” St. Germain said.

Also, olanzapine is available as a generic drug and is relatively inexpensive, Loprinzi said.

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