# Medication duloxetine helps reduce pain from chemotherapy

April 2 2013

Among patients with painful chemotherapy-induced peripheral neuropathy, use of the anti-depressant drug duloxetine for 5 weeks resulted in a greater reduction in pain compared with placebo, according to a study in the April 3 issue of *JAMA*.

"Approximately 20 percent to 40 percent of patients with cancer who receive neurotoxic chemotherapy (e.g., taxanes, platinums, vinca alkaloids, bortezomib) will develop painful chemotherapy-induced peripheral neuropathy. Painful chemotherapy-induced neuropathy can persist from months to years beyond chemotherapy completion, causing significant challenges for cancer survivors due to its negative influence on function and quality of life. Chemotherapy-induced peripheral neuropathy is difficult to manage, and most randomized controlled trials testing a variety of drugs with diverse mechanisms of action revealed no effective treatment," according to background information in the article.

There is evidence that serotonin and norepinephrine dual reuptake inhibitors are effective in treating neuropathy-related pain. Several phase 3 studies have shown that duloxetine is an effective treatment for painful diabetic neuropathy.

Ellen M. Lavoie Smith, Ph.D., of the University of Michigan School of Nursing, Ann Arbor, and colleagues conducted a randomized phase 3 trial to examine whether duloxetine would lessen chemotherapy-induced peripheral neuropathic pain. The study included 231 patients who were 25 years or older being treated at community and academic settings

between April 2008 and March 2011. Study follow-up was completed July 2012. Stratified by chemotherapeutic drug and comorbid pain risk, patients were randomized to receive either duloxetine followed by placebo or placebo followed by duloxetine. Eligibility required that patients have a pain score of at least 4 on a scale of 0 to 10, representing average chemotherapy-induced pain, after paclitaxel, other taxane, or oxaliplatin treatment.

The initial treatment consisted of taking 1 capsule daily of either 30 mg of duloxetine or placebo for the first week and 2 capsules of either 30 mg of duloxetine or placebo daily for 4 additional weeks.

The researchers found that at the end of the initial treatment period, patients in the duloxetine-first group reported a larger decrease in average pain (average change score, 1.06) than those in the placebo-first group (average change score 0.34). The observed average difference in the average pain score between the duloxetine-first and placebo-first groups was 0.73. Of the patients treated with duloxetine first, 59 percent reported any decrease in pain vs. 38 percent of patients treated with placebo first. Thirty percent of duloxetine-treated patients reported no change in pain and 10 percent reported increased pain.

The authors note that the results suggested that patients who received platinums (oxaliplatin) may have experienced more benefit from duloxetine than those who received taxanes.

Pain-related quality-of-life improved to a greater degree for those treated with duloxetine during the initial treatment than for those treated with placebo.

"In conclusion, 5 weeks of duloxetine treatment was associated with a statistically and clinically significant improvement in pain compared with placebo. Exploratory analyses raise the possibility that duloxetine

may work better for oxaliplatin-induced rather than taxane-induced painful chemotherapy-induced peripheral neuropathy," the researchers write.

**More information:** *JAMA*. 2013;309(13):1359-1367