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A significant (and maybe life-saving) step in controlling chemo-induced nausea and vomiting (CINV)

By ACSH Staff — July 23, 2014

Of all the side effects people must endure during chemotherapy, nausea and vomiting are usually the most feared, as well as the most debilitating. Chemotherapy-induced nausea and vomiting (CINV) is not only horrible to experience, but can even mean the difference between life and death.

The degree of CINV is very dependent on the regimen (combination of drugs) that is used. And the regimen is determined by the type of cancer, so in many cases, highly emetogenic (very likely to cause vomiting) chemo drugs are the only choice. Some chemo combinations won t result in any CINV while others brutal. It is not uncommon for cancer patients on who are on highly emetogenic therapies to stop their chemo because the CINV is unbearable.

Enter Zofran. The first drug of its kind specifically designed to block the serotonin receptors near the brain that trigger the nausea and vomiting was introduced in 1987. Most oncologists agree that it revolutionized chemotherapy.

The drug (generic name ondansetron) was so good that scientists and clinicians looked for other conditions where it might be helpful. They succeeded. Zofran is now used for morning sickness, prophylactically for postoperative nausea and vomiting from general anaesthesia, and in hospital emergency departments for children who come in vomiting and dehydrated from stomach bugs.

Dr. John Dunn, M.D., a consultant in emergency services at the Carl R. Darnall Army Medical Center in Fort Hood, Texas, has said [1] "We see hundreds of kids every month at our emergency department. The nurses have the authority to administer Zofran -- one of the safest drugs we have --for vomiting kids as young as 2 months right at the door. By the time I see the kids, they are already feeling fine and sucking on a Popsicle."

But, there is one serious drawback to Zofran. There are two phases of CINV acute and delayed. Although Zofran is great for the first phase, it is not for the second.

But now, this problem may be a thing of the past. Phase III trials of two drugs one a more potent version of Zofran, and the other novel appear to be very encouraging.

The second drug, netupitant, operates by a different mechanism, and at a different location. Netupitant, the first member of a new class of drugs called neurokinin-1 (NK1) receptor antagonists, when combined with Aloxi (generic name palonosetron) a supercharged Zofran produced impressive results against both forms of CINV in a series of clinical trials.

Dr. Matti Aapro MD, of the Multidisciplinary Oncology Institute in Genolier, Switzerland, and colleagues published the results of one of the studies in the July issue of *Annals of Oncology*. The study was a randomized, prospective trial involving 1,455 women more than 97% of whom had breast cancer and in all cases, patients received anthracycline-cyclophosphamide combination chemotherapy which is considered to be moderately emetogenic.

The study group received a single dose of the netupitant-palonosetron (NEPA) combination. The primary measurement (endpoint) was defined as no vomiting during the delayed CINV phase, which was defined as between 25 to 120 hours following chemo. Across the trials two drugs in the Nepa group consistently outperformed the control medications, depending on dose, time of measurement, and the drugs that the control group got.

For example, in one trial, Nepa outperformed palonosetron alone: 91 percent did not vomit, vs. 77 percent receiving only palonosetron. This held true for significant nausea (90 vs. 80 percent) and complete protection (83% vs. 70 percent).

ACSH s Dr. Josh Bloom says, It may seem that the effect of the two-drug combination is modest when compared to the control group. But it is real, especially for the extra 10-15 percent of women who got the combination,. Also, keep in mind that palonosetron is already a highly effective drug against CINV more potent than Zofran, so the bar is high.

More important, he adds, is the fact that before Zofran, the rate of CINV from highly emetogenic chemo was almost 100 percent. Patients that received only moderately emetogenic chemo still suffered between 30-90% percent of the time. The fact that these awful side effects are mostly controllable is really a huge medical advance.

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[1] http://www.medicalprogresstoday.com/spotlight/2011/11/new-fda-drug-warning-may-deprive-cancer-patients-of-vital-medicine.php