Extrapyramidal Reaction to Ondansetron

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The authors present a case report and discussion of a patient who experienced an unusual untoward extrapyramidal reaction to ondansetron, a 5HT3-antiserotonin receptor blocking agent used to treat chemotherapy-induced vomiting. *Cancer* 1992; 69:1275.

Chemotherapeutic agents used in the systemic treatment of cancer often cause significant nausea and vomiting. Common side effects of most antiemetic drugs are extrapyramidal neurologic sequelae. Ondansetron is a new antiemetic drug, approved by the FDA in 1991, that has been shown to be highly effective in the prevention of nausea and vomiting. To date, there have been only two vague, unpublished reports in clinical trials of some central nervous system symptoms associated with the administration of this drug.[1] This article will describe a previously unreported occurrence of extrapyramidal toxicity with the use of ondansetron.

Case Report

A 58-year-old man with locally metastatic oat cell carcinoma of the lung to the right supraclavicular region was admitted to the hospital for his first cycle of intensive cisplatin-containing chemotherapy. Before hospital admission, the patient was completely staged including a brain computed tomography (CT) scan, the results of which did not show any evidence for metastatic disease. The patient received ondansetron as an antiemetic in a dose of 0.15 mg/kg at a total dose of 10 mg in 50 ml of normal saline for 15 minutes. The patient also received 20 mg of intravenous dexamethasone before receiving ondansetron. Fifteen minutes after receiving the ondansetron, the patient complained of shoulder and back pain with immediate onset of opisthotonos and difficulty moving because of stiffness and mild shortness of breath. The symptoms gradually improved with the entire process lasting a total of 10 minutes. One month later, during the second cycle of chemotherapy, the patient had an identical extrapyramidal reaction to a 25% reduced dose with 7.5 mg ondansetron with diphenhydramine pretreatment. Ondansetron was therefore discontinued and replaced by an alternative antiemetic regimen. When vomiting became excessive, the patient requested reinitiation of ondansetron, which was performed at 50% dosage (5 mg every 4 hours for 3 doses each day with 35 mg of diphenhydramine in advance). The patient had good antiemetic control without neurologic side effects.

The patient has adult onset diabetes mellitus. His blood sugars were well controlled with diet. All electrolytes were normal as were the results of liver function tests and renal function tests.

Discussion

Ondansetron is a newly approved antiemetic drug used in patients receiving intensive chemotherapy. The agent is of a newly described 5HT3-antiseratonin receptor blocking agent. This agent has antiemetic efficacy superior to metoclopramide during the first 24 hours after the administration of cisplatin chemotherapy.[2] One advantage of this new class of medication is that it does not produce extrapyramidal symptoms. In the current case report, there was a clear correlation between ondansetron administration and the onset of extrapyramidal neurologic signs and symptoms. Although no cases have been reported of this phenomenon, a personal communication with Glaxo Inc. Research Institute showed that two patients whose cases were reported in their clinical trials had neurologic symptoms.[1] One patient experienced involuntary head jerking during the continuous infusion of ondansetron, and the other patient experienced akathisia. The correlation with drug administration in these two cases, however, was not as clear as it was in our patient.

References

1. Personal communication. Glaxo Inc. Research Institute, May 15, 1991.
2. De Mulder PHM, Seynaeue C *et al.* Ondansetron compared with high-dose metoclopramide in prophylaxis of acute and delayed cisplatinum-induced nausea and vomiting. *Ann Intern Med* 1990; 113:834–840.

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