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Ondansetron in the Prophylaxis of Nausea and Vomiting Induced by Carboplatin Combination Chemotherapy

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Carboplatin (CBDCA) is a second generation platinum coordination compound with antitumour activity in various forms of neoplasia [1] and lower toxicity, especially nephrotoxicity, than the parent compound cisplatin (CDDP). Intensity and duration of vomiting are reduced and nausea and anorexia, which are usually long-lasting after the use of CDDP, are considerably shortened. CBDCA induces nausea without vomiting in 25% of patients and vomiting in 53% (severe in 17%) [1]. Antiemetic premedication has been documented only by Smith *et al.*, who used a combination of metoclopramide and lorazepam, reporting 27% severe vomiting [2]. Ondansetron (OND) is a selective 5-HT_3 antagonist with high antiemetic activity in emesis induced by CDDP and non-CDDP-based chemotherapy [3, 4]. Evans *et al.* used OND for CBDCA-induced emesis resistant to standard antiemetics. In 18 pretreated patients, the author obtained complete protection from vomiting in 66% of cases [5]. In our study, we assessed the efficacy and safety of OND in the control of acute and delayed nausea and emesis from CBDCA (300 mg/m^2) in combination with other cytostatics. The study was open to patients aged 18–70 years receiving their first course of chemotherapy. From December 1990 to June 1991, 20 patients (14 males and 6 females) entered the trial. The median age of the patients was 55.5 years (range 41–70). Performance status (ECOG) was 1 in 8 cases and 2 in the remaining 12. The tumour type was non-small cell lung cancer in 7 cases, small cell lung cancer in 3, head and neck cancer in 4, ovarian cancer in 5, and endometrial cancer in 1. OND 8 mg orally was administered 1–2 h prior to chemotherapy, followed by 8 mg orally twice a day for 5 days. Emesis and nausea were recorded by the patients on a side-effect report form. The response was defined as follows: complete response (CR): 0 emetic episodes in 24 h; major response (MAR): 1–2 emetic episodes in 24 h; minor response (MIR): 3–5 emetic episodes in 24 h; failure: ≥5 emetic episodes in 24 h.

Results: CR in 15 (75%) cases, MAR in 1 (5%), MIR in 4 (20%), and no failures. Complete protection from both acute emesis (emesis in the 24 h following chemotherapy) and delayed emesis (emesis beginning 24 h or more after chemotherapy) was reported in 15 (75%) cases. Nausea was absent in 10 (50%) patients, mild in 5 (25%) and moderate in 5 (25%). The treatment was well tolerated, with 1 case of tiredness and sedation and 1 case of slight constipation. No further side-effects were reported. Table 1 summarises characteristics of chemotherapy and OND results. Ours is the first published study in patients without previous experience of chemotherapy receiving their first course of CBDCA. OND was highly effective and well tolerated in the prophylaxis of acute emesis induced by CBDCA chemotherapy, though its efficacy in the prevention of delayed emesis remains unclear.

Table 1. Ondansetron in carboplatin (300 mg/m^2) combination chemotherapy

	Number of patients	CR
Male patients		
CBDCA + VDS	10	8
CBDCA + 5Fu	4	2
Female patients		
CBDCA + CTX	5	4
CBDCA + CTX + EDX	1	1
Total	20	15

CBDCA = Carboplatin, VDS = vindesine, CTX = cyclophosphamide, EDX = epirubicin, CR = complete response (the response of the first 24 h only is reported).

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