Olanzapine for the prophylaxis and rescue of chemotherapy-induced nausea and vomiting (CINV): a retrospective study

Ronald Chow[1], Leonard Chiu[1], Nicholas Chiu[1], Liying Zhang[1], Mark Pasetka[1], Jordan Stinson[1], Breanne Lechner[1], Natalie Pulenzas[1], Sunil Verma[2], Edward Chow[1], Carlo DeAngelis[1]

Radiation Oncology UNIVERSITY OF TORONTO

Sunnybrook HEALTH SCIENCES CENTRE

[1]*Sunnybrook Odette Cancer Centre, Toronto, Canada*
[2]*Tom Baker Cancer Centre, University of Calgary, Calgary, Canada*

Introduction

- The efficacy of olanzapine in the prophylaxis of CINV has been documented, but the literature on the use of olanzapine as a rescue medication for breakthrough CINV has been scarce
- The following study retrospectively evaluated the safety and efficacy of olanzapine for the treatment of breakthrough CINV
- The efficacy and safety of olanzapine in the prophylactic setting was also examined in a smaller cohort

Materials and Methods

- Electronic medical records of adult patients aged > 17 years receiving a prescription for olanzapine from the Odette Cancer Centre Pharmacy at Sunnybrook Hospital between January 2013 and June 2015 were reviewed retrospectively
- Inclusion criteria required receiving one or more doses of olanzapine for the rescue or prophylaxis of CINV and documentation of the outcome.

Results

- A total of 154 patients and 193 treatment cycles were included in the breakthrough setting, while a total of 16 patients and 20 treatment cycles were included in the prophylaxis setting
- In the breakthrough setting, 88% of cases experienced improved nausea, while 21% of cases reported improved vomiting
- In the prophylactic setting, 100% of cases experienced improved nausea, while 65% achieved improved vomiting
- 43% of cases in the breakthrough setting and 65% of cases in the prophylactic setting experienced sedation.
- In the breakthrough setting, there was no significant difference on side effects or outcomes between the use of a 2.5 mg or 5 mg dose of olanzapine.
- However, in the prophylactic setting, the use of a 5 mg olanzapine dose was associated with significantly higher proportions of sedation compared to a 2.5 mg dose (p=0.03).

Conclusions

- Olanzapine is effective in improving CINV in both the prophylactic and breakthrough settings
- The safety, efficacy, and appropriate dosage of olanzapine for the rescue of breakthrough CINV should be prospectively evaluated in a randomized controlled trial.

Table 1: Proportion of patients with different outcomes upon use of olanzapine for breakthrough CINV or the prevention of CINV

Olanzapine outcomes	Rescue setting (n=193, 100%)		Prophylaxis setting (n=20, 100%)	
	No.	%[a]	No.	%[b]
Improved nausea	170	88.1	20	100.0
Improved vomiting	42	21.8	7	35.0
Failure nausea[c]	23	11.9	0	0
Failure vomiting[d]	6	3.1	0	0

[a], total number of chemotherapy cycles [193] is used as the denominator for calculating the proportions in this setting; [b], total number of chemotherapy cycles [20] is used as the denominator for calculating the proportions in this setting; [c], failure nausea is defined as worse or same nausea level despite the use of olanzapine; [d], failure vomiting is defined as worse or amount of vomiting despite the use of olanzapine. CINV, chemotherapy-induced nausea and vomiting.

Table 2: Proportion of patients who took olanzapine and developed certain side-effects

Side effect	Rescue setting (n=193, 100%)		Prophylaxis setting (n=20, 100%)	
	No.	%[a]	No.	%[b]
Sedation	82	42.5	13	65.0
Sedation with continuation of olanzapine	57	29.5	12	60.0
Sedation with discontinuation of olanzapine	25	13.0	1	5.0
Constipation	61	31.6	7	35.0
Mild, constipation, no medication prescribed	19	9.8	1	5.0
Severe constipation with prescribed medications	42	21.8	6	30.0

[a], total number of chemotherapy cycles [193] is used as the denominator for calculating the proportions in this setting; [b], total number of chemotherapy cycles [20] is used as the denominator for calculating the proportions in this setting.

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