ANTIEMETICS FOR PATIENTS WITH BREAST CANCER: AN EVALUATION OF IMPLEMENTING MASCC/ESMO RECOMMENDATIONS IN A SCOTTISH CANCER CENTRE

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Background

Anthracycline and cyclophosphamide (AC) combination chemotherapy is a mainstay of treatment of Neo/adjuvant breast cancer. Breast cancer patients receiving AC based chemotherapy are at high risk of chemotherapy induced nausea and vomiting (CINV) due to both drug and patient risk factors;¹ treatment delays and dose reductions reduce survival outcomes in this group so control of CINV is vital.² MASCC/ESMO antiemetic guidelines recommend triplicate CINV prophylaxis for AC chemotherapy.³ At the time of this study, NK1 antagonists were not recommended in NHS Scotland out with cisplatin-based regimens, in such circumstances MASCC/ESMO recommended the 5HT-3 antagonist palonosetron.

MASCC recommendations for Antiemetic Prophylaxis 2010

Summary Acute Nausea and Vomiting	
EMETIC RISK GROUP	ANTIEMETICS
High	5HT3 + DEX + APR
Anthracycline + Cyclophosphamide (AC)	5HT3 + DEX + APR
Moderate (other than AC)	PALO DEX
Low	DEX or 5HT3 or DRA
Minimal	No routine prophylaxis
5HT3 = serotonin receptor antagonist	DEX = DEXAMETHASONE
APR = APREPITANT	PALO = PALONOSETRON
DRA = dopamine receptor antagonist	
* NOTE: If the NK1 receptor antagonist is not available for AC chemotherapy, palonosetron is the preferred 5-HT3 receptor antagonist.	
The Antiemetic Subcommittee of The Multinational Association of Supportive Care in Cancer. - Ann Oncol 2010; www.mascc.org	

Objective

This MSc project investigated the effect of updating the antiemetic regimen for breast cancer patients receiving AC chemotherapy from Ondansetron to Palonosetron to reflect MASCC 2010 recommendations.

Method

This was a 2 cohort study. A historic retrospective (control) group to determine the incidence of nausea and vomiting and a second cohort examined prospectively after the antiemetic regimen was updated in August 2012. All chemo naive, adult patients receiving AC chemotherapy for breast cancer were included and were identified from the electronic chemotherapy prescribing system. All patients receiving chemotherapy in NHS Tayside are asked to complete a symptom diary card and data was collected from completed returned cards. The Primary outcome was the proportion of patients with complete response (CR) (no vomiting, no nausea and no need for rescue medication) after first cycle of chemotherapy. Secondary outcomes included the proportion of patients free from acute vomiting, acute nausea, delayed vomiting and delayed nausea.

Control Cohort

Dexamethasone 20mg IV
+ 8mg BD x 3 days PO
Ondansetron 16mg PO

Intervention Cohort

Dexamethasone 8mg IV
+ 8mg OD x 3 days PO
Palonosetron 0.25mg IV

Proportion of patients with complete response, and free from acute or delayed nausea and vomiting after first cycle AC chemotherapy

Results

37 patients per cohort were evaluable. A higher CR was observed in the historical cohort, 43.2% vs. 24.3% though this was not statistically significant ($p=0.140$, 95% CI -2.7 to 40.5%). When broken down into the components of acute or delayed, nausea and vomiting, the control group had a larger proportion of patients free from acute vomiting (91.9% vs 67.6%; $p=0.019$, 95% CI 6.8 to 41.8%). There was no statistically significant difference between the 2 cohorts in any other outcome.

Conclusion

The intervention was confounded by the coinciding reduction in dexamethasone dose and insufficiently powered due to educational project time constraints. However, CR rates were within the anticipated range and indicated there was insufficient evidence to support a 5-fold increase in cost associated with switching from Ondansetron to Palonosetron. AC chemotherapy should be considered High Risk for CINV and the dexamethasone doses were restored to reflect high risk recommendations. NK1 antagonists were approved for use within NHS Scotland for ALL chemotherapy with a high risk of emesis in 2017. Further evaluation is warranted.

References

1. Rosco JA et al. Insight in the prediction of chemotherapy-induced nausea. Supportive Care Cancer 2010; 18: 869-876
2. Chirivella I, Bermejo B, Insa A, et al. Optimal delivery of anthracycline-based chemotherapy in the adjuvant setting improves outcome of breast cancer patients. Breast Cancer Research & Treatment 2009; 114(3): 479-84
3. Roila F, et al. Ann Oncol. 2010;21, Suppl 5:v232-43