Characterization of Prophylactic Antiemetic Regimens in Pediatric Patients Receiving Moderately and Highly Emetogenic Chemotherapy

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Published In/Presented At

Degiacomo, J., & Held, K. (2013, December 8-12). *Characterization of prophylactic antiemetic regimens in pediatric patients receiving moderately and highly emetogenic chemotherapy.* Poster presented at: The American Society of Health-System Pharmacists Midyear Clinical Meeting, Orlando, FL.

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Purpose:

The objective of this study is to characterize the prophylactic antiemetic regimens used in pediatric hematology/oncology patients receiving moderately and highly emetogenic chemotherapy (MEC/HEC) and to describe the modifications to their antiemetic regimens with subsequent courses of chemotherapy.

Background:

- Recommendations for prophylactic antiemetics differ between adults and pediatrics
  - American Society of Clinical Oncology (ASCO) recommends a serotonin (5-HT3) antagonist plus a corticosteroid for pediatric patients receiving MEC or HEC[1]
  - Patients with a contraindication to corticosteroids should not use a 5-HT3 antagonist alone due to poor CINV control[2]
  - Pediatric Oncology Group of Ontario (POGO) suggests nabilone or chlorpromazine with a 5-HT3 antagonist in patients with a contraindication to corticosteroids[2]
    - **These agents are commonly reserved for patients with breakthrough CINV due to undesirable side effects[2-4]**
    - **Recommendation supports the need to add an agent with a different mechanism of action to replace the corticosteroid within the antiemetic regimen[2-4]**
- Pediatric-specific recommendations are lacking for incorporation of newer agents into prophylactic antiemetic regimens
- Breakthrough emesis is a significant problem
  - More than 90% of patients receiving HEC will have emesis and prophylactic antiemetics will only reduce vomiting to about 30%[5]
  - Prophylactic regimens should be modified and tailored to the individual patient to prevent CINV with subsequent chemotherapy cycles
  - No studies have shown one agent or strategy to be superior

Study Design:

- Retrospective medical record review
- Inclusion criteria:
  - Patients less than 18 years of age at time of first MEC or HEC course between July 1, 2008 to June 30, 2013
  - Receipt of first MEC or HEC course for an oncologic diagnosis during an inpatient admission to a pediatric service
  - Patients must have received at least one subsequent course of MEC or HEC during an inpatient admission to pediatric hematology/oncology service to be evaluated for modification of antiemetic regimen
- Exclusion criteria:
  - Patients 18 years of age and older at time of first MEC or HEC course
  - Outpatient chemotherapy administrations
  - Patients with documented nausea and/or vomiting related to cause other than chemotherapy
  - Patients who received radiation therapy prior to initiation of chemotherapy
- The primary outcomes of this study will be to describe the combinations of antiemetic regimens that patients received following receipt of MEC or HEC and to report the percentage of patients whose prophylactic antiemetic regimens were modified for subsequent courses of chemotherapy

Disclosure:

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

- Jessica Degiacomo – nothing to disclose
- Kristin Held – nothing to disclose

Methods:

- Pediatric hematology/oncology admission records will be used to generate a list of patients
- Emetogenicity will be classified as reported by the NCCN guidelines[5]
- Patient data to be collected will include:
  - Age, gender, body weight, body surface area
  - Diagnosis
  - Chemotherapy regimen (protocol, drug, dose, route), emetogenicity of regimen
  - Antiemetic regimens (initial, modified and breakthrough; drug, dose, route, frequency, days of administration, number of doses)
  - Emetic events
  - Antiemetic adverse drug reaction history
- Following data collection, the percentages of pediatric oncology patients receiving MEC or HEC who experience breakthrough nausea and/or vomiting will be calculated. Of those patients, the percentage who had their antiemetic regimen modified for subsequent courses of chemotherapy will be calculated.

References:

1 Basch E, Prestrud AA, Hesketh PJ et al. Antiemetics: American Society of Clinical Oncology practice guideline update. *J Clin Oncol.* 2011;29:4189-98.

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4 Dupuis LL, Nathan PC. Options for the prevention and management of acute chemotherapy-induced nausea and vomiting in children. *Paediatr Drugs.* 2003;5:597-613.

5 National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology: Antiemesis. V.1.2014. Accessed November 20, 2013. Available at: http://www.nccn.org/professionals/physicians_gls/PDF/antiemetics.pdf.