Implementation of a Chemotherapy-Induced Nausea and Vomiting Clinical Pathway for Moderate-high to Highly Emetogenic Chemotherapies

A Nursing Research Project
2/01/2014 – 3/31/2015

NURSING RESEARCH

• PURPOSE:
  – INCREASE NURSING KNOWLEDGE
  – IMPROVE PATIENT OUTCOMES

NURSING RESEARCH

Systematic inquiry designed to develop trustworthy evidence about issues of importance to the nursing profession, including nursing practice, education, administration, and informatics

IMPORTANT POINTS

• All proposals reviewed for approval by NRRB
• One RN investigator prepared at a graduate level
• PI must provide documentation of NIH or comparable education
• Following NRRB approval goes to IRB

COMPONENTS

• Question or Problem
• Literature Review
• Abstract
• Proposed research question/hypothesis
• Methodology

COMPONENTS

• Proposed timeline
• Consent/ protection of human subjects
• Acquired costs – approval from supervisor
• Dissemination
### NEXT STEPS

- Complete NRRB Request for Research Proposal Form
  - Application
  - Conflict of interest
  - Cost analysis form
- Meet with NRRB for approval

### Introduction

- New Cancer Diagnosis
  - Fear
  - Stress
  - Increased anxiety
  - Overwhelming Experience
  - Altered Comprehension

### Introduction

- New Cancer Diagnosis
  - Information Overload
  - Decreased retention of education provided
  - Nausea and Vomiting among the most distressing side effects of Chemotherapy
  - Empirical evidence of effectiveness of pharmacologic Interventions for the prevention of CINV

### Introduction

- Adherence to clinical pathways can manage patient symptoms and side effects

- No published studies on clinical pathways for CINV

### Background

- Coborn Cancer Center: Medical Oncology Clinic, Radiation Oncology Clinic, Infusion Center
- Education provided by staff in all areas
- Nurses heard from patients that instructions varied in how to take their medications for nausea

### Background

- A formal survey completed by RNs indicated:
  - Variation in how nurses were teaching patients to take their anti-nausea medications
  - Variation in level of confidence by RNs in their knowledge of anti-emetic medications
  - Variation in the nurses understanding of the indication for dexamethasone in take home meds
Review of Literature

• Chemotherapy-induced Nausea and Vomiting (CINV) an important adverse effect of chemo
• 75% of patients report nausea at some point of treatment
• Delayed CINV is more common than acute symptoms
• Nausea is more common than emesis
• CINV can complicate or prevent administration of planned therapy – thus decreased quality of life and increased healthcare costs

Review of Literature

• Prevention of CINV
  – Optimizes outcomes of cancer therapy
  – Maximizes quality of life
  – Prevention during initial cycles is crucial – prevents anticipatory nausea and vomiting

Review of Literature

Appropriate antiemetic therapy when combined with patient education and clear communication results in optimal emetogenic control.

Oncology nurses play a critical role to positively impact the prevention and management of CINV

Review of Literature

• The art of oncology nursing:
  • Effective communication
  • Important role in education on what to expect and how to handle chemo treatment symptoms
  • Nurses provide clear instructions
  • Nurses collaborate with medical staff and pharmacy to provide individualized plans of care

Review of Literature

• Clinical Pathways
  • Tools for tracking patients progress to achieve positive outcomes
  • Include key events (diagnostic tests, treatments, activities, medications, education)
  • Occur within a specific time frame to achieve desired outcomes
  • Promote organized and efficient patient care based on evidence based practice
  • Optimize outcomes in the acute care and home care settings

Review of Literature

• No published specific pathways for CINV
• National Comprehensive Cancer Network (NCCN) publishes guidelines for Antiemesis

• Humphrey Cancer Center at North Memorial Hospital developed a CINV pathway based on NCCN Guidelines for Take Home Medications that has been effective for patient education
Research Questions

1. Will the implementation of a CINV clinical pathway increase patients’ knowledge and understanding of how to take home medications?

2. Has the implementation of a CINV clinical pathway decreased the incidence of CINV?

Methodology

Setting:
- Coborn Cancer Center, St. Cloud Hospital

Implementation:
- Subjects receiving initial cancer treatment determined to be of moderately-high or highly emetogenic nature
- 50 patients pre-implementation of creation of CINV pathway asked to complete a survey at the one week toxicity review by an oncology nurse practitioner
- Approx 175 CINV pathways developed by Cancer Center CNS on moderately-high to highly emetogenic chemo protocols

Methodology

Implementation continued
- After the survey of pre-implementation patients, formal education was provided to oncology staff on the CINV pathways by members of the research project
- CINV pathways were initiated on newly diagnosed cancer patients who were prescribed moderate-highly and highly emetogenic chemo
- 50 patients post-implementation of creation of CINV pathway asked to complete a survey at the one week toxicity review by an oncology nurse practitioner

Definition of Terms

Emetogenicity: Prediction of the risk of emesis following antineoplastic chemotherapy

NCCN Levels of Emetogenicity:
- Level 5: High Emetic Risk: 90% frequency of emesis
- Level 3/4: Moderate Emetic Risk: 30-90% frequency of emesis
- Level 2: Low Emetic Risk: 10-30% frequency of emesis
- Level 1: Minimal Emetic Risk: <10% frequency

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Acknowledgement:

Pathways adapted from:
Jeremy Whalen PharmD
North Memorial Medical Center
Chemotherapy Patient Survey
The purpose of this study is to assess effectiveness of nurse teaching related to chemotherapy-related nausea and vomiting. If you are willing to participate, please complete this brief (5 minute) survey. The survey will ask about your experience following chemotherapy. There are no foreseeable risks associated with this project, nor are there any direct benefits to you. Your participation is voluntary. You may hand in the survey to the office nurse, place it on the desk in the office when you leave, or give it to the scheduler when you make your next appointment. If you have any questions, you can contact Mary Weis, RN, CNS, who can be reached at 320-229-5199, extension 72114.

This survey is to find out how satisfied you were with the information you received on your first day of chemotherapy related to how to prevent and manage nausea and vomiting.

Patient Survey
• Questions adapted from the EORTC Quality of Life Item Bank – Used with permission from Dagmara Kulis.

Statistical Analysis
• Incidence of nausea and vomiting lower than reported in literature
• Frequencies and grounded t-tests by Statistical Consulting Center – St. Cloud State University
• No significant relationship in any question
• Staff Survey: RNs felt tool useful and more effective in patient teaching

Limitations
• Staff awareness and involvement in design of pathway may have increased quality and amount of patient education information

Future Studies
• Redesign of research question – measure knowledge and understanding
• Another study comparing similar populations from two different cancer centers
References


References

• Schwartzberg, L. S. (2007). Chemotherapy-Induced Nausea and Vomiting: Clinician and Patient Perspectives. Supportive Oncology 3(1), 5-12

References