Nurse-Led Improvements and Collaborations in Outpatient Settings

Friday, May 18 • 2:45–4 pm

Note one action you’ll take after attending this session: ________________________________

1. Evaluation of a Standardized Titration Schedule to Be Utilized for the Administration of All Paclitaxel Infusions
Carrie Patton, BSN, RN, OCN
MemorialCare
Todd Cancer Institute
Long Beach, CA

2. Improving Communication in the Transfer of Care in Nursing Handoff: Perfecting a Culture of Nursing Collaboration and Patient Safety in the Outpatient Infusion Setting
Stacy Farrell, MSN, RN, OCN
Memorial Sloan Kettering Cancer Center
Basking Ridge, NJ

3. Combating Chemotherapy Verification Fatigue: Nurse-Led Quality Improvement Interventions in Pre-Treatment Lab Evaluation
Aya Sato-DiLorenzo, RN, BSN, OCN, BMTCN
Beth Israel Deaconess Medical Center
Boston, MA

4. Wake Up: A Prescription for Increasing Patient Safety in the Ambulatory Infusion Room
Jennifer Foster, BSN, RN, OCN, ONN-CG
Baylor Scott and White Hospital
Temple, TX

Clinical Practice
Formation of a Paclitaxel Titration Schedule to Reduce Hypersensitivity Reactions

Carrie Patton, BSN, RN, OCN
Registered Nurse
Memorial Care, Long Beach Medical Center
Todd Cancer Institute

Disclosures

• None
Background

• Paclitaxel (Taxol)
  – A popular chemotherapy agent used in the treatment of a number of cancers including:
    • Ovarian, breast, lung, cervical, pancreatic, and many others
  – Classified as a:
    • Taxane
    • Plant alkaloid
      – Natural derivative

Background

• Paclitaxel is often associated with hypersensitivity reactions ranging from mild to severe
  – Including:
    • Generalized urticaria, facial flushing, shortness of breath, angioedema, and anaphylaxis
  – Most reactions occur during the first or second infusions

    78% within the first 10-15 minutes of initiation of the drug

Literature Review

A thorough literature review conducted revealed:
• Although limited, data was available for patients who had experienced a hypersensitivity reaction in regards to re-challenge and desensitizing protocols.
• Scarcity of data existing regarding guidelines for administering Paclitaxel during initial infusions.
Administration Guidelines

- Manufacturer provided administration guidelines include:
  - Pre-medications
    - Corticosteroids, Diphenhydramine, H, antagonists
  - Subjective recommendation
    - “Administer slowly”

Strategy

Retrospective chart review was conducted on all patients who received Paclitaxel in the Ambulatory Infusion Center over a 14 month period.

- Review current nursing practices
- Identify variations in administration practices
- Standardize infusions
- Correlate infusion practices with reaction rates
- Standardize infusions
- Establish a titration schedule for all Paclitaxel administrations

Retrospective Study Results

- >10% reaction rate in patients receiving 3-hr infusions
- Significantly more reactions occurred when tubing unprimed
**Plan**

**Staff Education**
- New titration schedules to be followed regardless of infusion time, patient reaction history, or volume.
  - 99 mL/hour for 5 minutes (0.49 mL)
  - 10 mL/hour for 5 minutes (0.49 mL) (0.83 mL)
  - 25 mL/hour for 5 minutes (1.25 mL)
  - 50 mL/hour for 5 minutes (2.51 mL)
  - 100 mL/hour for 5 minutes (5.02 mL)

**Pharmacy Labeling**
- Total volume infused is 15.41 mL in initial 20 minutes

**Study**
- 3 month period of data collection on EVERY Taxol infusion including:
  - RN administering medication
  - Date
  - Pt Initials
  - Cycle/Dose (mg)
  - Pre-meds given
  - Reaction
  - Re-challenge with specific re-challenge protocol
  - Subsequent reaction w/re-challenge

**Study Results**
- Total number of Taxol administrations
  - NO: 103
  - YES: 115
- <1% reaction rate observed in (combined 1 hr and 3 hr infusions)
- 3 month data revealed a decrease in reaction rate to <1%
Project Takeaways

• **Prime the line... EVERYTIME**
  - Initial step of your titration schedule should always be to clear the priming volume from the tubing.
  - This ensures your titration schedule begins with the administration of the drug and not saline or other priming solution.

• **Slow and Steady**
  - Titrating Taxol introduces the drug slowly to the body and allows for early recognition and intervention in the event of a hypersensitivity reaction.

• **Consistency is key**
  - Standardizing administration practices not only decreases reactions but increases nursing and patient confidence with infusion.

Special Thanks

• Todd Cancer Institute
  - Memorial Care, Long Beach Medical Center

• Project Co-Authors
  - Nicolann Hedgpeth, DNP, RN, AOCNP
  - Kresta Grabau, BSN, RN, OCN
  - David Lu, PharmD-Student Intern

References


Nurse-Led Improvements and Collaborations in Outpatient Settings

Stacy Farrell MSN, RN, OCN
Chemotherapy Infusion Nurse
Memorial Sloan Kettering Cancer Center
Basking Ridge, NJ Regional Center

Disclosures

- The authors of this presentation have no actual or potential conflict of interest in relation to this program/presentation
- There is no underwriting or funding for this presentation
- All of the authors are clinical nursing staff members at Memorial Sloan Kettering Cancer Center, Basking Ridge, NJ Regional Infusion Unit
Improving Communication in the Transfer of Care in Nursing Handoff

Perfecting a Culture of Nursing Collaboration and Patient Safety in the Outpatient Infusion Setting

Mary Wilson-Carnes BSN, RN, OCN
Tara Cheney BSN, RN
Rodwell Manalo BSN, RN
Heidi Foss BSN, RN, OCN

Significance

Approximately 300 million handoffs occur each year in the U.S.

- Joint Commission Center for Transforming Healthcare reported miscommunication as "the leading root cause of sentinel events." (Joint Commission Perspectives, 2012)
- The World Health Organization (WHO) includes improved communication in handoff in its top five patient safety solutions
- Consequences of inadequate handoff:
  - Inappropriate, delayed or omitted treatment
  - Adverse events
  - Inefficiency
  - Patient harm and dissatisfaction
  - "Nurses may be found legally liable for failure to report necessary information during handoff." (Riesenberg, Leitzsch & Cunningham, 2010)
Background/Purpose

Extended Operating Hours from 10-12 hours
Need for end of day transfer of patient care at shift change

Huddle
Brief Group Meeting
General

Handoff
One to One
Specific
Question, Clarify, Confirm

Goals: Improve communication, patient safety and nursing satisfaction with the handoff process.

Methods

- Pre and post surveys were conducted to evaluate nursing perceptions, safety, information retention and efficacy of tools.
- A new systematic handoff tool and procedure were developed and implemented

Transfer of Care Handoff Form
- Developed and implemented
- Chairside report
- Standardized and systems focused
- Transfer of Care Process
- Changed from a huddle style report to a one to one nurse handoff
- In the presence of the patient
- Interactive verbal and written

JCAHO Targeted Solutions for Hand Off

- [http://www.jointcommission.org/assets/1/6/tst_hoc_persp_08_12.pdf](http://www.jointcommission.org/assets/1/6/tst_hoc_persp_08_12.pdf)
- SHARE
  - Standardize critical content
  - Hardwire within your system
    - Hand off tool
    - Expectations set about conducting successful handoff
  - Allow opportunity to ask questions
  - Reinforce quality and measurement
    - Use the forms
    - Consider looking at safety measures (i.e. NSI like falls)
  - Educate and coach
    - Make successful handoff a priority at organizational level
### Hand Off Tool

<table>
<thead>
<tr>
<th>Affix Patient Sticker</th>
<th>POD#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code Status</td>
<td></td>
</tr>
<tr>
<td> Full</td>
<td></td>
</tr>
<tr>
<td> DNR</td>
<td></td>
</tr>
<tr>
<td>High Risk for Falls</td>
<td></td>
</tr>
<tr>
<td> Yes</td>
<td></td>
</tr>
<tr>
<td> No</td>
<td></td>
</tr>
<tr>
<td>Allergies</td>
<td></td>
</tr>
<tr>
<td>Precautions</td>
<td></td>
</tr>
<tr>
<td>Diagnosis/Treatment</td>
<td></td>
</tr>
<tr>
<td> Hx of Reaction</td>
<td></td>
</tr>
<tr>
<td>IRB#__________</td>
<td></td>
</tr>
</tbody>
</table>

### Vital Signs

- ht:______cm / wt:______kg

- VS: ___________________
  -  ABNORMAL
  -  OBTAIN POST VITALS
  -  PERFORM ORTHOSTATICS

### Access

-  PIV:_____
  -  PICC
  -  HAI
  -  IP
  -  MEDIPORT
  -  OTHER: _______________

### Labs

-  ABNL
  -  POST
  -  RE-DRAW ______

### Pre-Medication

CHEMO / BIO / PLAN / IMPLEMENTATION / EVALUATE

### Assistive Devices

-  CANE
  -  WHEELCHAIR
  -  WALKER
  -  OTHER: _______________

### Neuro-Oriented

-  PERSON
  -  PLACE
  -  TIME

### Motor Sensory Deficit

-  YES
  -  NO

### Pain

#____ / 10

### GU / GI

- I&O
- COMMENTS:

### Skin / Musculoskeletal

### Cardiovascular

- EKG
  - ECHO/MUGA
  - COMMENTS:

### Respiratory

- O2 _____
  -  OTHER: ________________

### PFTs

- COMMENTS:

### Discharge / End Time

-  CHAP
  -  EMAR
  -  Follow Up Task

### Barriers to Effective Handoffs

- Communication barriers
- Lack of standardization
- Equipment issues
- Environmental issues
- Inadequate or misuse of time
- Complex cases and high work loads
- Inadequate training or education
- Human factors

(Riesenberg, Leitzsch & Cunningham, 2020)
Models used in Handoff

- SBAR
- S: Situation
- B: Background
- A: Assessment
- R: Recommendation

- I PASS THE BATON
- I: Introduction
- P: Patient (identify the patient)
- A: Assessment (V/S, symptoms etc)
- S: Situation (current status)
- S: Safety Concerns (falls precautions, allergies)
- THE
- B: Background (history, meds)
- A: Action (action taken or required)
- T: Timing
- O: Ownership
- N: Next

Sandlin, 2007

Results

Does the Transfer of Care Tool Provide Adequate Information?

<table>
<thead>
<tr>
<th></th>
<th>Huddle</th>
<th>Handoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>55%</td>
<td>93%</td>
</tr>
<tr>
<td>Post</td>
<td>93%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Huddle versus Handoff RN Survey

<table>
<thead>
<tr>
<th></th>
<th>Pre i/o</th>
<th>Post i/o</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN Perception of Safety</td>
<td>55%</td>
<td>55%</td>
</tr>
<tr>
<td>RN Ability to Ask Questions</td>
<td>55%</td>
<td>55%</td>
</tr>
<tr>
<td>RN Retention of Information</td>
<td>41%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Clinical Practice (Farrell)
Nursing Implications

- Improved patient safety and outcomes
- Enhanced nursing collaboration and satisfaction
- Improved the quality of communication in the TOC in nursing handoff

Effective handoff

- CLEAR
- COMPLETE
- CONCISE

Meet the Team

- Tara Cheney BSN, RN (cheneyt@mskcc.org)
- Stacy Farrell MSN, RN, OCN (farrells@mskcc.org)
- Heidi Foss BSN, RN, OCN (fosshl@mskcc.org)
- Rodwell Manalo BSN, RN (manalor@mskcc.org)
- Mary Wilson-Carnes BSN, RN, OCN (wilsoncm@mskcc.org)
References


Combating Chemotherapy Verification Fatigue: Nurse-led Quality Improvement Interventions in Pre-treatment Lab Evaluation

Aya Sato-DiLorenzo, RN, BSN, OCN, BMTCN
Unit Based Educator
Ambulatory Hematology/Oncology & Bone Marrow Transplant
Beth Israel Deaconess Medical Center

Disclosures

- I have nothing to disclose.
Our QI Warriors
Combating Chemotherapy Verification Fatigue

Planning

- Define near-misses
  “orders approved by nurses but halted by pharmacy”
- Aim statement
  Reduce the number of near-misses by fifty percent over three months

Tools Used to Analyze Baseline Processes and Barriers

- Process Map
- Staff Survey
- Cause-and-Effect Diagram
Process Map
To understand baseline nursing processes

Unit-Based Nursing Survey
To understand existing barriers as identified by staff nurses

The survey was created and analyzed in Survey Monkey

Cause and Effect Diagram
To categorize each existing barrier and visually present its influence on the system.
Brainstorming Sessions by Nurses

- Group discussions
- Ideas on post-it notes

Selecting Interventions

Each idea on a post-it note was placed in one of the coordinates within a priority/pay-off matrix according to its potential effectiveness (low to high impact) and perceived ease (difficult to easy).

Chosen Interventions

- Two-RN lab check during verification.
- Utilization of "display the last day lab results" function in EMR to limit lab display to the most recent results only.
- Practice champions from each treatment area initiated these interventions and encourage their peers to follow their lead.
Study the Results

Interventions

Sustainability

Post-intervention Follow-up

surveillance

Unit-Based Follow Up Survey

The survey was created and analyzed in Survey Monkey

Barriers to full success identified by nurses

• Returning to past habits.
• Primary nurse telling the second verifying nurse that pre-treatment labs have been verified.
Key Conclusions

- Our nurse-identified-and-led interventions were successful in reducing the number of near-misses.
- Further interventions are needed to sustain a low occurrence over time.
- Identification of latent failures and interventions to correct them may be necessary to engender sustainable changes.

What’s Next?

- A project by clinical nurses with the aim to improve provider-nurse communication.
- A project by nursing leadership to improve the clarity of chemotherapy orders.
- Clinical guidelines by pharmacy addressing toxicity monitoring for treatment regimens frequently used at our institution.

Three Takeaways

- Choose your interventions wisely. Do not jump into conclusions without careful analysis of contributing factors.
- Engage your colleagues and find solutions that are supported by many.
- Not gaining the result you were looking for does not mean a failure. It is your opportunity to dig in deeper.
How to Reach Us:

Project Leader:
Aya Sato-DiLorenzo, RN, BSN, OCN, BMTCN
Unit Based Educator
Ambulatory Hematology/Oncology & Bone Marrow Transplant
Beth Israel Deaconess Medical Center
asato@bidmc.harvard.edu

Project Coach:
Meghan Shea, MD
Attending Medical Oncologist, Beth Israel Deaconess Medical Center &
Instructor in Medicine, Harvard Medical School
mshea4@bidmc.harvard.edu

References

• Zerillo, J. (2017). Oncology quality process improvement project training. Lecture presented at Oncology Quality Process Improvement Project (PIP) in Beth Israel Deaconess Medical Center, Boston.
Wake Up: A Prescription for Increasing Patient Safety in the Ambulatory Infusion Room

Jennifer Foster, BSN, RN, OCN, ONN-CG
Genitourinary Cancer Nurse Navigator

Jennifer Havens, BSN, RN, OCN, ONN-CG
Lung Cancer Nurse Navigator

Baylor Scott & White Vasicek Cancer Treatment Center

Disclosures

• The presenter has no financial relationships to disclose
Preventing Allergic Reactions

- A large number of cancer therapy infusions have the potential to cause hypersensitivity reactions.
- Prevention of hypersensitivity reactions traditionally includes the use of H₁ antihistamines, i.e. diphenhydramine.
- Diphenhydramine is a first generation H₁ antihistamine that was introduced in 1945.
  - Traditionally has been the medication of choice for acute allergic reaction/anaphylaxis.
  - In studies utilizing chemotherapy/biotherapy, diphenhydramine is frequently used in the prevention of infusion reactions.
  - First generation H₁ antihistamines readily cross the blood brain barrier and occupy approximately 75% of the H₁-receptor sites in the brain which correlates with increased CNS related symptoms.

Elderly Population and Antihistamine Effect

- Age is the greatest risk factor for developing cancer. In fact, 60% of people who have cancer are 65 or older.
- People 65 and older often have multiple comorbidities resulting in polypharmacy.
- Impaired drug metabolism in this population leads to increased CNS symptoms.
- Diphenhydramine is included on the Beer’s list.

Patient Safety Concerns

- Falls
- Incontinence
- Confusion (altered mental status)
- Restless legs
- Sedation, inability to report adverse reactions
- Impaired driving
- Hypotension
- Urinary retention
- IV dislodgement
But Why???

- Patients complained of and nurses noted increased adverse side effects from diphenhydramine during the first two cycles of treatment (traditionally paclitaxel) and the physicians would often switch the patient to cetirizine at the nurses’ request.
- Nurses questioned, “Why use diphenhydramine?” – because that is how the drugs causing hypersensitivity werestudied, and that is “always how it has been done.”

Second Generation H₁ Antihistamines

- Emerged in the 1980s.
- Examples: terfenadine, astemizole, loratadine, cetirizine, and levocetirizine.
- Developed to decrease the side effect profile of antihistamines.
- Second generation H₁ antihistamines occupy approximately 20% of H₁-receptors in the brain which correlates with less cognitive dysfunction.

Comparison of First and Second Generation H₁ Antihistamines

<table>
<thead>
<tr>
<th>First Generation Antihistamine</th>
<th>Second Generation Antihistamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side Effects</td>
<td>Side Effects</td>
</tr>
<tr>
<td>CNS depression (somnolence, impaired cognitive and psychomotor performance)</td>
<td>Minimal or no CNS depression</td>
</tr>
<tr>
<td>Anticholinergic effects (dry mouth, blurred vision, urinary retention)</td>
<td>Minimal or no anticholinergic effects</td>
</tr>
<tr>
<td>Other CNS effects (nausea, dizziness, drowsiness, hallucinations)</td>
<td></td>
</tr>
<tr>
<td>Diphenhydramine Onset of Action</td>
<td>Cetirizine Onset of Action</td>
</tr>
<tr>
<td>15-60 minutes</td>
<td>15-30 minutes</td>
</tr>
</tbody>
</table>
Implementation

- RNs requested review of current practice by pharmacy/physician group
- Pharmacist completed literature review comparing efficacy of various premedications (antihistamines)
  - Limited data available
  - Cetirizine thought to be acceptable option
- Physician buy-in
- Order sets were updated to reflect the change from IV diphenhydramine to oral cetirizine as a premedication for: paclitaxel, cetuximab, and rituximab

Results

Switch from diphenhydramine to cetirizine in the ambulatory infusion setting demonstrated:

- No rise in the number of hypersensitivity reactions
- No increase in the required wait time after premedication (does not effect time for scheduling infusion chair)
- Decreased incidence of CNS-related effects, reduced patient reports of adverse side effects, diminished need for one-on-one nursing care, and overall improved patient safety

Key Takeaways

- No increased frequency/severity of reactions with use of cetirizine vs. diphenhydramine and no effects on the length of infusion chair time (premedication wait time)
- Nurses noted decreased safety concerns and that patients verbalized fewer antihistamine related complaints with the switch to cetirizine
- Nurses can impact safety by being patient advocates by speaking up and questioning the “status quo”
References


