

PATIENT SAFETY ISSUES: SAFE HANDLING OF HAZARDOUS DRUGS, INFECTION

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Objectives

- State two methods of improving patient safety in oncology nursing
- Discuss current recommendations for the safe handling of hazardous drugs
- Describe interventions that reduce the occurrence of infection in oncology patients

Introduction

- Patient safety defined:
 - "The prevention of healthcare errors and the elimination or mitigation of patient injury caused by healthcare errors" (NPSF, 2003).

Errors

- Types
 - Diagnostic
 - Treatment
 - Preventive care
 - Failures
- Influencing factors
 - Staffing
 - Personal / social
 - Work flow
 - Physical environment
 - Organizational factors

(AHRO, 2003)

Nursing-Sensitive Outcomes:

Outcomes that are attained through or are significantly impacted by nursing interventions (Given, et al., 2004)

- ◆ Safety (Preventable adverse events):
 - Patient falls
 - Pressure sores
 - Infections
 - Hazardous drug exposure

Hazardous Drugs Defined

- Carcinogenicity
- Teratogenicity / developmental toxicity
- Reproductive toxicity
- Organ toxicity at low doses
- Genotoxicity
- Structure and toxicity profiles of new drugs that mimic existing drugs determined hazardous by the above criteria
(ASHP, 1990; NIOSH, 2004)

Potential Routes of Exposure

- ◆ Dermal absorption:
 - Direct drug contact
 - Contact with contaminated surfaces
- ◆ Ingestion via contaminated:
 - Food, gum
 - Hand-to-mouth transfer
- ◆ Inhalation:
 - Aerosols
 - Vapors
- ◆ Injection:
 - Sharps
 - Breakage

Current Guidelines: U.S. Governmental Agencies

- Occupational Safety and Health Administration (OSHA)
 - *Controlling Occupational Exposure to Hazardous Drugs*
- National Institute for Occupational Safety & Health (NIOSH)
 - *Preventing Occupational Exposures to Antineoplastic & Other Hazardous Drugs in Healthcare Settings*

OSHA, 1986, 1995, 1999; NIOSH, 2004

Current Guidelines: U.S. Professional Societies

- American Society of Health-System Pharmacists (ASHP)
 - *Technical Assistance Bulletin / Guidelines on Handling Hazardous Drugs*
- Oncology Nursing Society (ONS)
 - *Chemotherapy & Biotherapy Guidelines and Recommendations for Practice*
- Association of Pediatric Hematology Oncology Nurses (APHON)
 - *The Pediatric Chemotherapy and Biotherapy Curriculum*

ASHP, 1985, 1990, 2006; ONS, 1988, 1996, 1999, 2001, 2005, 2009; APHON 2004, 2007

Patient and Family Exposure

- During hazardous drug administration
 - Healthcare setting
 - Home
- Handling contaminated excreta
 - Urine
 - Feces
 - Emesis

Safety: Treatment Setting

#1: Communication

- Minimize environmental contamination with hazardous drugs
- Protect family members from exposure
 - Limit visitors during treatment
 - Waste containment
- Prevent exposure of "non-chemo" patients
 - Separate rooms (when possible)
 - Separate toilets (when possible)
 - Cleaning

Safety at Home

#1 Patient education

- Home infusion
- Safe handling of oral agents
 - Storage
 - Administration
 - Disposal
- Excreta handling
- Linen handling

Infection Risk

- Increased risk in cancer patients
 - Myelosuppressive chemotherapy
 - Hematologic malignancies
 - Bone marrow disease
 - Implanted/ Invasive devices

Safety: Treatment Setting

- Hand hygiene (caregivers AND patients)
- Meticulous care of invasive devices
- Minimize occurrence of neutropenia (growth factors)
- Monitor for neutropenia
 - Anticipate nadir following chemotherapy
 - Check complete blood count
 - Calculate ANC
- Institute neutropenic precautions
- Monitor for occurrence of infection
- Prompt initiation of therapy when indicated

Prevention of Infection

- Pneumonia vaccine
- Antibacterial/ antifungal/ antiviral prophylaxis in selected patients at high risk
- Limit visitors with symptoms of respiratory infection
- Environmental interventions
 - HEPA filters
 - Pre-construction planning
 - Ice handling

Incorporating into Practice

- Patient care
- Patient teaching
- Policies and procedures
- Quality/performance improvement activities
- Standards of care
- Order sets
- Orientation
- Educational programs

Application to Practice (1)

- Problem
 - Chemotherapy in outpatient setting
 - No standard method of providing instructions for decreasing exposure
- Analysis
 - Review of ONS Guidelines
- Solution
 - Development of printed education materials
 - Incorporation into discharge instructions

Patient Teaching

Verbally AND in writing:

"Many chemotherapy drugs are harmful. They are meant for YOU because of your illness and not for others."

For someone helping with the medication:

- Wear gloves when opening the bottle.
- Carefully shake out the right number of pills into the cap of the bottle
- Take off the gloves and throw them away. *Do not use them for anything else.*
- Wash your hands.

Application to Practice (3)

- Problem:
 - Increase in patient admissions for febrile neutropenia
- Analysis:
 - Patients did not receive myeloid growth factors
 - Patients not "typical" candidates based on regimen (>20% risk)
- Solution:
 - Develop assessment tool based on NCCN* Guidelines
 - Initiate risk assessment for all patients
 - Provided education/ policy / process
 - Refer patients to physician for consideration of prophylaxis

National Comprehensive Cancer Network, 2010

Advancing Oncology Nursing Practice

- Validation of outcomes of care
 - Effectiveness
 - Quality
 - Specific indicators
- NSPOs : Effects of nursing interventions
 - Patient safety
 - Symptom experience
 - Functional status
 - Psychological distress
 - Cost of care

Essence of Nursing Practice

- Assessment
 - Orderly
 - Systematic
 - Efficient
 - Focused
- Analysis & planning
 - Problem identification
 - Baseline & periodic measurement
 - Selection of intervention
- Implementation
 - Interventions
 - Deliberate actions
- Evaluation
 - Assessment of outcomes
 - Comparison to expected outcomes
 - Documentation

Challenges in Oncology Nursing

- Time constraints
- Innovation
- Complexity
- Changing expectations
 - Providers
 - Patients
 - Public

Questions