

## Chemotherapy Drugs: Safe Handling Prevents Medication Errors

Rufa Mitsu RN, MSN <sup>1</sup>, Santhi Appavu RN, MSN, PhD <sup>2</sup>

<sup>1</sup>College of Nursing (CON-R) <sup>1</sup>King Saud bin Abdulaziz University for Health Sciences

<sup>2</sup>Christian college of Nursing, Neyyoor<sup>2</sup> Dr. MGR Medical University

Corresponding Author: Rufa Mitsu RN, MSN

**Abstract:** Chemotherapy is now a mainstay of cancer therapy used in the treatment of most of solid tumors and hematologic malignancies. One of the primary responsibilities of the nurse in the delivery of chemotherapy is to ensure that the accurate dose of the appropriate drug is given to the appropriate individual. Despite the fact that safeguards are in place, serious medication errors do occur. Such tragic events are regrettable but not so remarkable when one considers the number of chemotherapy doses given and the number of patients treated. The complex high-risk process of administering chemotherapeutic agents creates a challenge for stakeholders to develop a framework of best practices to reduce errors and increase knowledge for individuals involved in both direct and indirect care. <sup>[1]</sup>This article outlines the comprehensive review of medication error, factors and contributing factors of medication error, strategies to prevent medication error and the ways you can increase both staff and patient safety.

**Keywords:** chemotherapy, medication error, prevention, safety strategies

Date of Submission: 12-01-2019

Date of acceptance: 27-01-2019

### I. Introduction

Any preventable event that may cause or lead to inappropriate use or patient harm while the medication is in the control of the health care professionals is called medication error. (Segen's Medical Dictionary). The main role of nurses in the field of oncology is chemotherapy administration which is sensitive domain in oncology nursing where little negligence or mistake may lead to adverse consequences for patients, staff and environment. Literature reveals that, medication errors in chemotherapy are a common (44%) incidence due to lack of specific knowledge and training of the staff in chemotherapy, prescription, preparation and administration. This lacking of knowledge and training of the staff leads to fatal incidences such as over dose of chemotherapy, wrong calculations of drugs, wrong route of transfusion which sometimes result in patient's death. <sup>[2]</sup>

### II. Factors Leading to Chemotherapy Medication Error

- Errors during chemotherapy preparation and administration.
- Errors during labelling of chemotherapy serums (patient name, medication name and dose, spelling errors etc.)
- Ordering errors (ordering less or more medication than required) Adding wrong medication into chemotherapy serum.
- Forgetting adding medication into chemotherapy serum.
- Administrating the chemotherapy to wrong patient.
- Not following chemotherapy sequence during multicheck therapy administration.
- Not following the administration duration.
- Lack of chemotherapy safety standards.
- Errors during chemotherapy preparation and administration.
- Errors during labelling of chemotherapy serums (patient name, medication name and dose, spelling errors etc.)
- Ordering errors (ordering less or more medication than required) Adding wrong medication into chemotherapy serum.
- Forgetting adding medication into chemotherapy serum
- Administrating the chemotherapy to wrong patient.
- Not following chemotherapy sequence during multicheck therapy administration.
- Not following the administration duration.
- Lack of chemotherapy safety standards. <sup>[3,4]</sup>

### III. Contributing factors of Chemotherapy medication error

- Incomplete orders.
- Exclusion of drug calculations and lab verifications.
- Elimination of double check process.
- Omission of final verification components at the bed side.
- Exclusion of wearing proper PPE.
- Omission of patient teaching.
- Incorrect disposal of waste.
- Incomplete orders.
- Exclusion of drug calculations and lab verifications.
- Elimination of double check process.
- Omission of final verification components at the bed side.
- Exclusion of wearing proper PPE.
- Omission of patient teaching.
- Incorrect disposal of waste.<sup>[5]</sup>

### IV. Strategies to Prevent Chemotherapy Medication Error

1. Preview drug orders in advance to assure the drug plan and premedication's are correct.  
A team approach increases the safety of the therapy for the patients when multiple people have reviewed the order against the national standard of care for the correct drug regimen, dosage, timing, and sequence.
2. Provide in writing the laboratory tests; that must be ordered and reviewed prior to the administration of each chemotherapy drug or drug regimen.
3. Do not accept verbal or second-hand orders for chemotherapy;
  - A computer-generated or written order from a physician or another certified clinician should be your standard.
4. Confirm that the ordered drug dosage falls within normal dosing parameters.
  - Dosage mistakes can be fatal.
5. Know the chemotherapy agent and regimens, dosage, frequency, and potential side effects.
  - Chemotherapy nurses need to know the plan of care, not just how to give the drug.
  - The chemotherapy nurse must also help encourage patients to adhere to premedication instructions.
  - Patients should also be made aware that missing appointments can affect their outcome.
  - The nurse, who is often the one to assess patients prior to administration of a treatment, must recognize abnormal symptoms.
6. Ensure that the treatment regimen follows national "Standard of Care" guidelines.
  - Administering unapproved drugs or combinations of drugs without adequate data to prove safety and efficacy is flirting with a poor outcome, litigation, and poor reimbursement.
7. Identify patients;
  - Have patients give you their name and birth date instead of offering it to them.
  - Identify the patient each time a drug is administered to prevent the wrong drug delivered to the wrong patient.
8. Present information to patients both verbally and in writing;
  - Develop a fact sheet that stresses the importance of adhering to drug therapy.
  - Ideally, include family members in the education session. Give patients a written schedule so they know when to return for treatment or an office visit.
  - If patients do not come in as scheduled, be sure to call them to determine the reason.
  - Document non adherence; that is valuable information.
9. Develop an "adherence contract" for patients to sign;
  - Written literature with a patient's signature may be useful.
10. Monitor patients for potential toxic side effects during the nadir period.
11. Review height and weight, when performing a physical assessment prior to each treatment. Since many chemotherapy agents are based on height and weight, incorrect measurements or data entry mistakes can result in medication errors.<sup>[3,5,6]</sup>

### V. Ways you can increase both staff and patient safety:

#### 1. Staff safety leads to patient safety

Although policies and procedures are important, there is another part of the safety equation, to offer quality care, staff must be properly supervised and provided with adequate equipment, leadership, practice guidelines, and support.

- Schedule enough staff in the infusion centre to handle emergencies. Nurses should not treat patients alone without a second clinician in the same area.
  - Before the first administration of a new drug, schedule meetings for staff to learn about the drug, administration guidelines, and potential side effects.
  - Record staff attendance at educational programs.
  - Only allow trained and certified personnel to mix chemotherapy.
  - Follow safety guidelines for use of equipment for personal protection from chemotherapy exposure.
  - Mix drugs without haste, spillage, confusion, or interruption under laminar flow hoods with safety equipment.
2. **Administer drugs in the recommended sequence** each time.
  3. **Standardize infusion rates** for each regimen and be diligent in administering all drugs following the recommended guidelines.
  4. **Be careful about prescribing multiple refills for oral chemotherapy agents.**

Because many of these oral chemotherapy drugs are to be taken for a prescribed period with a rest week between cycles, there is the potential that the drug could be refilled and taken continuously without a break. Limiting the prescriptions to one cycle and scheduling the patient for an office visit prior to each cycle can help prevent serious oral medication issues.
  5. **Be proactive.** Encourage staff to report close calls. Incident reporting should be viewed by all as a way to prevent problems. Also, it's best to:
    - Have emergency drugs and equipment available.
    - Practice emergency response drills.
    - Schedule a weekly or monthly staff meeting with pharmacy and infusion staff to share concerns and discuss infusion or medication issues. This builds teamwork and awareness.<sup>[3,7]</sup>

## **VI. Conclusion**

Educational programs about cancer and safe handling of cancer chemotherapeutic drugs provide the nurses to safeguard themselves as well as patients. Minimizing errors and increasing safety has risen to the forefront of oncology practices.

## **Reference**

- [1]. Schrijvers DL. Extravasation a dreaded complication of chemotherapy. *Annals of Oncology*.2003; 14(3): 26-30.
- [2]. Opfler KB, Wirtz DM, Farley K. A chemotherapy standard order form: preventing errors. *Oncol Nurs Forum*; 26(1):123-8
- [3]. Ranchon F, Salles G, Spath HM et al. Chemotherapeutic errors in hospitalized cancer patients attributable damage and extra cost. *BMC Cancer*. 2011;11:478
- [4]. Tavakoli-Ardakania M, Omidic S, Eshraghid A, Salamzadeh J. Medication Errors in Administration of Chemotherapeutic Agents: an Observational Study. *Iranian Journal of Pharmaceutical Sciences*. 2013; 9 (2): 1-11.
- [5]. Vioral AN. Examining Oncology Nurses' Knowledge of Chemotherapy Errors Using Two Self-Directed Learning Strategies. *Indiana University of Pennsylvania*. 2014; 39-46.
- [6]. Dohse L. Safeguarding patients and avoiding medical errors in chemotherapy infusion suites. *Community Oncology*. 2008; 5(5): 250-252.
- [7]. Ulas A, et al. Medication Errors in Chemotherapy Preparation and Administration: a Survey Conducted among Oncology Nurses in Turkey. *Asian Pacific Journal of Cancer Prevention*. 2015; 16, 1699-1705.

Rufa Mitsu RN, MSN. "Chemotherapy Drugs: Safe Handling Prevents Medication Errors" .IOSR Journal of Nursing and Health Science (IOSR-JNHS), vol. 8, no.01 , 2019, pp. 28-30.