

KINGSTON GENERAL HOSPITAL

NURSING POLICY

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| SUBJECT | Administration of Chemotherapy and Biotherapy Agents: Added Nursing Skill, Registered Nurse (only when administered for cancer treatment) | NUMBER | M-1710 |
| | | PAGE | 1 of 7 |
| | | ORIGINAL ISSUE | 1989 May |
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Principles:

1. Chemotherapy and/or biotherapy are modalities of cancer treatment in children and adults.
 - 1.1. Agents are given to cure cancer, to prevent micrometastasis (adjuvant intent), before cancer surgery (neo-adjuvant intent) and to manage cancer symptoms (palliative intent).
 - 1.2. Many of these types of agents are classified as hazardous and the nurse must integrate safe handling principles into practice.
2. Chemotherapy and/or biotherapy agents can also be administered for other types of conditions; however, the doses are usually much lower.
 - 2.1. The nurse still must integrate safe handling principles of hazardous drugs into their practice.

Policy:

1. Registered Nurses will follow the Chemotherapy & Biotherapy Guidelines and Recommendations for Practice (Oncology Nursing Society) for the nursing assessment, administration and management of chemotherapy and biotherapy agents irrespective of where the patient is in the continuum of care (see Appendix A for practice summary).
 - 1.1 The Guidelines and Recommendations will be followed for all routes of chemotherapy and biotherapy agent administration including:
 - 1.1.1 intravenous push/bolus injection;
 - 1.1.2 intravenous infusion;
 - 1.1.3 intramuscular injection;
Exception: KGH Nursing policy does not support the guidelines for maximum safe volumes for intramuscular (IM) injections for infants and children. (Refer to HDH/KGH Parenteral Drug Therapy Manual Appendix F)
 - 1.1.4 subcutaneous injection;
 - 1.1.5 oral;
 - 1.1.6 topical;
 - 1.1.7 intracavity (intraperitoneal, intravesicular etc.); and
 - 1.1.8 aerosol.
 - 1.2 The Guidelines and Recommendations will be used to guide safe drug handling and disposal of drugs and equipment.
 - 1.2.1 Occupational Health and Safety Services will also conduct training on hazardous drug safe work practices per KGH Administrative Policy 02-095 Workplace Safety Management of Hazardous Drugs.
 - 1.3 The Guidelines and Recommendations will be used to guide nursing education including:
 - 1.3.1 classification of chemotherapy & biotherapy agents;
 - 1.3.2 safety issues related to drug administration;
 - 1.3.3 nursing assessment and management of chemotherapy & biotherapy related incidents, e.g. extravasations.

SUBJECT: Administration of Chemotherapy and
Biotherapy Agents: ANS, RN (for cancer
treatment only)

NUMBER: M-1710
PAGE: 2 of 7

2. The authorization process for Registered Nurses to administer chemotherapy and biotherapy for cancer treatment includes the following:
 - 2.1 Completion of a theoretical educational program;
 - 2.2 Completion of a clinical practicum (applies the knowledge gained in the educational component); and
 - 2.3 Achievement of 80% on an open book test.

3. In all cancer treatment situations, an independent double check of the mathematical calculation of the dose, which includes body surface area (BSA), blood work, and area under the curve (AUC) (if appropriate) is carried out by two RN's authorized in chemotherapy administration.
 - 3.1 Both RN's document the double check on the order form.

EXCEPTION: In the Cancer Center, the documentation of the double check is on the Systemic Therapy Treatment Record.

4. In all situations, regardless of the patient population, a concurrent double check of blood return and IV patency is carried out by two RN's before vesicant administration.
 - 4.1 Both RN's document the double check in the progress notes.

EXCEPTION: In the Cancer Center, the documentation of the double check is on the Systemic Therapy Treatment Record.

Related Policies and Procedures:

KGH Administrative Policy 02-095 Workplace Safety Management of Hazardous Drugs
KGH Nursing Procedure M-1711 Administration of Chemotherapy and Biotherapy Agents

References:

Oncology Nursing Society (2005) *Chemotherapy & Biotherapy Guidelines and Recommendations for Practice*. Pittsburg, PA (author).

HDH/KGH Parenteral Drug Therapy Manual Appendix F: Pediatric Intramuscular Injection Volumes.

Authorizing Signature

Date

APPENDIX A
Systemic Therapy Nursing
Chemotherapy & Biotherapy Practice Summary

| <i>Fundamental Administration Principles</i> | <i>Reference</i> |
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| 1. Kingston General Hospital and the Cancer Centre of Southeastern Ontario will practice according to current Oncology Nursing Society "Chemotherapy & Biotherapy Guidelines & Recommendations for Practice". | KGH Nursing Policy M-1720 |
| 2. RNs complete an authorization/certification program prior to administering chemotherapy. | KGH Nursing Policy M-1720 |
| 3. Experienced oncology nurses who are competent in administering cytotoxic therapy administer cytotoxic therapy. | ONS Guidelines Page 10, Section 5 (j) |
| 4. Authorized/certified RN's prior to administration, have a physician's signature for all written or electronically generated orders. | ONS Guidelines Page 10, Section 5 (c) |
| 5. It is recommended that preprinted forms or computer-generated forms be used to order chemotherapy. | ONS Guidelines Page 10, Section 5 (d) |
| 6. Pharmacy mixes all chemotherapy solutions and spike chemotherapy prepared bags with secondary lines under a Biological Safety cabinet (BSC). The secondary line is primed with a compatible IV solution. | ONS Guidelines Page 55, Section 7 (a) (1), Section 7 (a), (9) |
| 7. Pharmacy crushes all cytotoxic oral drugs under a Biological Safety cabinet (BSC). | ONS Guidelines Page 55, Section 3. (4) |
| <u>Age Specific Concerns:</u> Young children may require liquid preparations. | ONS Guidelines Page 71, Section 7 (a) |
| <u>Age Specific Concerns:</u> For IM injections in infants and children, Appendix F of the HDH/KGH parenteral Drug Therapy Manual will be followed. | KGH Nursing Policy M-1720 |
| 8. Intra-arterial therapy administration is considered a local treatment, as the drug's first major site of action is the target lesion. | ONS Guidelines Page 72, Section 2 (b) |
| 9. Intravesicular administration requires placement of a Foley catheter and frequent repositioning of the patient. | ONS Guidelines Page 73, Section g (2) & (4) (b) |
| 10. Intraperitoneal administration requires placement of a peritoneal access device. | ONS Guidelines Page 73 (e) (2) |
| 11. Intrathecal/Intraventricular administration requires a lumbar puncture or implanted Ommaya reservoir. | ONS Guidelines Page 72 Section 2 (a) |
| 12. Intravenous administration is required for vesicant agents. | ONS Guidelines Page 73 Section h (1) |
| 13. Agents are not administered through a central line without blood return until a chest x-ray or line-flow study confirms line placement and patency. | ONS Guidelines Pages 74-75 (b) |
| 14. A nurse is the final checkpoint in the medication-administration process. | ONS Guidelines Page 9, Section 2 (a) |
| 15. An independent double check is done for dose verification, BSA, blood work and AUC (if appropriate) by a least two (2) professionals (two RNs; RN/pharmacist) authorized/ certified/prepared in chemotherapy administration." Its not about competence its about reducing the probability of human error" | ONS Guidelines Page 64, Section 3 (a) (2) |
| 16. Determine the vesicant and irritant potential of the drug(s). | ONS Guidelines Page 70, Section 5 (f) |

| Fundamental Administration Principles | Reference |
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| 17. Tubing's and syringes with Leur lock fittings or other secure-type connections are used for chemotherapy administration. | ONS Guidelines Page 55, Section 7 (a) (7) |
| 18. Verify blood return and IV patency prior to hanging an infusion. | ONS Guidelines Page 75, Section d (1) |
| 19. The chemotherapy agent may be connected directly to the IV catheter, or into a compatible maintenance line according to institutional policy. | ONS Guidelines Page 76, Section 5 (ii) |
| 20. <i>Piggy-back Infusion Method (short term):</i> A main line is established with a compatible solution. Chemotherapy infusions and those requiring specialized tubing e.g. non-PVC for Taxol, Taxotere are piggybacked to the main line provided they are attached to the most proximal site. | ONS Guidelines Page 75, Section d (2) |
| 21. <i>Free-Flow Infusion Method:</i> A main line is established with a compatible solution. Attach a syringe with the drug at the proximal injection port. Administer the drug as an IV push, allowing the flush solution to dilute the drug. | ONS Guidelines Page 76, Section b (i) |
| 22. <i>Direct Push Infusion Method:</i> A cathlon is used or a main line is established with a compatible solution. Administer the drug as per regimen. | ONS Guidelines Page 76, Section b (ii) |
| 23. <i>Continuous Infusion:</i> <i>A PICC line or implanted device is most commonly used for continuous infusion due to the concentration of the drug being infused e.g. doxorubicin, 5 FU, Cisplatin.</i> | KGH/CCSEO Practice |
| Age Specific Concerns: Use a volumetric infusion pump to administer chemotherapy to pediatric patients. | ONS Guidelines Page 70, Section D (2) (d) |
| 24. Prior to administration the RN will confirm with the patient two unique identifiers- e.g. name, DOB CR# etc. | ONS Guidelines Page 70 (i) |
| 25. Baseline vital signs as indicated. Vital sign monitoring frequency will vary depending on the drug, regimen, hypersensitivity reactions, clinical trials, non-treatment untoward event e.g. pulmonary embolus and so forth. | ONS Guidelines Page 73 Section 1 (b) |
| 26. Intravenous Access Device Sites: Include peripheral IV's and central venous catheters e.g. PICC, Port-a Cath. Vein patency and flushing the line is done with a minimum amount of ten (10) mL of a compatible IV solution between the administrations of each new drug. | ONS Guidelines Page 75 |
| 27. Documentation is done per the College of Nurses Practice Standard. It includes toxicity symptoms and management with follow-up care, patient education, access device assessment and establishment prior to infusion, discharge instructions, Concurrent double checks e.g. vesicant blood return and independent double checks (dose verification, Body Surface Area (BSA), blood work and Area Under the Curve (AUC) etc.). | ONS Guidelines Page 10, Section 2 |
| 28. Patient education is provided to patients about their medications and they are encouraged to ask questions and seek clarification before their drugs are administered. | ONS Guidelines Page 10, Section 5 (f) Page 11, Section 2 (g) |

| <i>Fundamental Administration Principles</i> | <i>Reference</i> |
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| <i>Chemotherapy Induced Hypersensitivity</i> | |
| 29. Emergency care/equipment/drugs are readily available. | ONS Guidelines Page 83, Section 2 |
| 30. Authorized/certified RN's must closely observe the patient for any local or systemic reaction for a minimum of 30 minutes. The need for emergency management usually arises within 30 minutes. Some patient circumstances may require 1:1 monitoring for the first 30 minutes minimum. | ONS Guidelines Page 85, Section h (1); Section 5 |
| 31. A flow chart on chemotherapy induced hypersensitivity reactions will be made available for the authorized/certified RN to quickly reference. (Endorsed by the Systemic Therapy Committee). | |
| <i>Vesicant Administration</i> | |
| 32. <i>Peripheral Extravasations:</i> Authorized/certified RNs have knowledge on how to prevent extravasations. <i>Piggy-back or Short-term Infusions:</i> Avoid using an IV pump in order to decrease pressure on the veins. Monitor the site for signs of extravasation every 5-10 minutes for infusions less than 30 minutes. Check blood return every 10-20 minutes for infusion greater than 30 minutes. Avoid infusing vesicant agents greater than 30-60 minutes. DO NOT use an infusion control device to administer vesicant agents on an adult except when a central venous access device is present. | ONS Guidelines: Page 78 (4) Page 75 Page 75 (4) (b) Page 76 (b) Page 76 (c) Page 76 (5) (v) |
| 33. IV push Extravasations: When administering a vesicant, verify blood return every 2-5 mL. | ONS Guidelines Page 76 (b) (i) |
| 34. Central Venous Catheters (CVCs): Use a CVC or implanted access device to administer any vesicant infusing greater than 30-60 minutes. Inspect non-coring needle insertions site for needle dislodgement, leakage of IV fluid, drainage or edema. | ONS Guidelines Page 74 (b) Page 76 (v) Page 75 (c) (6) |
| 35. The vesicant agent with the smallest volume is administered first when multiple vesicants are required or the vesicant agent is administered based on the type of regimen. | Mullin, Beckwith, Tyler (2000) |
| 36. When administering a vesicant first, it is preferred that agent is administered into a new, uncompromised vein. | CINA Guidelines Page XII-3 |
| 37. An extravasations flow chart is made available for the authorized/certified RN to quickly reference (Endorsed by the Systemic Therapy Committee). | Endorsed by the Systemic Therapy Committee |
| 38. Extravasation kits are readily available in the clinical setting (Endorsed by the Oncology Nursing Practice Council). | Endorsed by the Ambulatory/Community Regional Systemic Therapy Clinical Practice Committee |
| <i>Vein Selection</i> | |

| Fundamental Administration Principles | Reference |
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| 39. Existing IV Sites: refer to ONS Guidelines. | ONS Guidelines Page 74 (4) (1) |
| 40. New IV sites: refer to ONS Guidelines. Adults 2 (a) Children 2 (b) | ONS Guidelines Page 74 (4) (2) |
| Safe Handling | |
| 41. Authorized/certified RN's will follow the current NIOSH and Oncology Nursing Society guidelines for "Safe Handling of Hazardous Drugs". | ONS Guidelines Page 53, Section A Corporate Policy |
| 42. Each health institution has appropriate personal protective practices/equipment/information: 42.1. Double gloving-gloves are disposable, powder-free and are made of chemoprotectant materials-latex, nitrile, polyurethane, neoprene. 42.2. Gowns-Lint-free made of low-permeability fabric e.g. polyethylene-coated materials, solid front, long sleeves, and tight cuffs. Disposable preferred. 42.3. Mask (respirator)-nonpowdered; air purifying, and particular-filter respirator when cleaning hazardous spills. 42.4. Eye & Face protection-face shields when there is a possibility of splashing. 42.5. Eye wash stations must be in close proximity to where drugs are administered. –If eyewash stand or sink adapter not available then designate a 250 mL 0.9% Sodium Chloride for eyewash. In the event of a splash, begin irrigation, for 15 minutes, with 250 mLs, upon completion continue with a one (1) liter solution. Following irrigation go to Emergency. 42.6. Personal Protective Equipment (PPE) flow chart for route of administration. 42.7. Spill kits are available wherever drugs are stored, transported, prepared or administered. 42.8. Chemotherapy spill flow chart is available for nurses to refer to in the event of a spill. 42.9. Drugs are transported in leak proof containers (needleless syringes are capped). 42.10. A patient information sheet is available outlining handling body fluids and other activities of daily living. | ONS Guidelines Page 53-63 |

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SUBJECT: Administration of Chemotherapy and Biotherapy Agents: ANS, RN (for cancer treatment only) **NUMBER:** M-1710
PAGE: 7 of 7

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