Pan Birmingham NHS
Cancer Network

Guideline for the Administration of Anti-cancer Treatment

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1. Scope of the guideline

This guideline has been produced to support the administration of anti-cancer drugs.

Contents	Section	Page
Intravenous bolus chemotherapy (vesicant and non-vesicant)	5	5
Intravenous infusional chemotherapy	6	5
Oral chemotherapy	7	6
Intrathecal chemotherapy	8	7
Intravesical chemotherapy	9	8
Intra-cavity chemotherapy	10	8
Intramuscular injection	11	8
Subcutaneous Injection	12	8
Topical	13	9
Intra-ocular	14	9
Eye drops	15	9
Miscellaneous routes of administration	16	9
Administration equipment – peripheral devices	17	10
Administration equipment – Central Venous Access Devices (CVADs)	18	11
Administration equipment – giving sets	19	11
Administration equipment – medical devices	20	11

2. Background

2.1 Only specialist Haemato-Oncology nurses or medical staff who have been assessed competent against local trust protocols for the administration of cytotoxic drugs and have maintained mandatory annual training can administer cytotoxic drugs.

2.2 Senior medical staff are not routinely required to administer intravenous chemotherapy but on request will be offered the same training as nursing staff and will require assessment as competent against local trust protocols. They will also need to maintain mandatory annual training.

2.3 House officers and FY, FY2 and ST posts are not authorised to administer intravenous cytotoxic chemotherapy, but following appropriate training, may administer intra cavity / intra-pleural chemotherapy.

2.4 **Issues with regard to the general good practice in the administration of medication have not been repeated in this guideline. However it is expected that these will also apply to the administration of anti cancer treatments.**

Guideline statements

3. Chemotherapy should only be administered in designated areas for administration of chemotherapeutic agents:

3.1 Chemotherapy must be given in a named area where it is agreed as part or whole of that areas' allowed activity.

3.2 As far as possible it should take place during normal working hours.

3.3 There should be a separate and identified area for the temporary storage of chemotherapy agents.

3.4 Designated areas should have all relevant policy and protocol documents available.

3.5 All areas in which chemotherapy drugs are administered must have the following equipment:

a) emergency bell/telephone
b) resuscitation equipment
c) drugs for the management of emergencies – cardiac arrest and anaphylaxis
d) extravasation kit
e) cytotoxic spillage kit
f) access to running water
g) disposal equipment e.g. appropriate sharps bins
h) copies of relevant policies and procedures

3.6 In exceptional circumstances chemotherapy may be administered in non designated clinical areas. These circumstances include:

a) Where emergency chemotherapy is required e.g. a patient in the intensive care unit where it would be clinically unsafe to move to the designated area, but it is deemed imperative for them to receive chemotherapy.
b) Where a patient has a performance status of 3 or above, i.e. they are confined to bed or chair for 50% of waking hours or completely disabled, and are therefore too frail or clinically unstable to transfer to the designated area.
c) Where a patient is on another ward and requires chemotherapy but there are no beds available within the designated area and it is deemed imperative for them to receive chemotherapy.

3.7 The decision to administer anti cancer treatment in non specific areas must always be taken following discussion with the oncology/haematology pharmacist and the patients' consultant and the following principles apply:

a) Administration should only be performed by an experienced chemotherapy trained practitioner.

b) The practitioner should carry with them to the area an extravasation kit, small spillage kit, cytotoxic sharps bin or label indicating cytotoxic content.
c) Before administering chemotherapy the practitioner should ensure resuscitation equipment, oxygen, telephone is close at hand and that appropriate medical cover is available.
d) The nurse should stay with the patient throughout the administration of the chemotherapy.
e) It is the responsibility of the practitioner to ensure that the patient and the nurse caring for the patient are aware of the care required post administration, the potential hazards to staff and the side effects associated with the treatment.
f) The administration of the chemotherapy and care instructions should be recorded in the patient's hospital notes.
g) All the cytotoxic waste should be disposed of in a designated sharps container.

4. When administering cytotoxic drugs:

4.1 Regardless of the route of administration, administration should not commence or should STOP if:

a) The patient requests the treatment to stop.
b) There is any doubt regarding the stability of the drug, route and method of administration, expiry, drug dosage, pre-treatment investigations or the prescription is unclear.
c) The environment in which treatment is being administered is deemed unsafe.
d) The patient demonstrates side effects or complications, particularly signs of hypersensitivity reaction or anaphylaxis.
e) The equipment fails to function effectively.
f) There is any doubt regarding the integrity of the venous access device being used.

4.2 Staff administering the anticancer treatment must have completed local competencies for administration of medicines and of anticancer drugs. They should work within professional and local guidelines and protocols for the checking and administration of both the prescription and the drugs. They should have undertaken (or be undertaking) IV training, and where necessary, be trained in phlebotomy and cannulation.

4.3 Information about each patient's treatment should be recorded according to local policy and in accordance with the Manual of Cancer Services (2004).[12]

4.4 The administering practitioner must ensure appropriate venous access with regards to:

a) site
b) position
c) patency

d) integrity
e) visibility

4.5 The use of aseptic techniques, observation of universal precautions and product sterility are required in all intravenous procedures [1]

5. Intravenous bolus chemotherapy (vesicant and non-vesicant)

5.1 The most irritant or vesicant drug should be given first. Vesicants should be given via a newly established cannula.

5.2 Consideration should be given to a Central Venous Access Device (CVAD) if peripheral access is difficult. (Please refer to the PBCN Guideline for the Care of Venous Catheters for the Administration of Anti-cancer Medication www.birminghamcancer.nhs.uk/staff/clinical-guidelines/chemotherapy

5.3 Patency of the device should be confirmed prior to use using blood return or free running saline. Patency should be rechecked every 3-4 mls during the administration of a vesicant.

5.4 Irritant / vesicant drugs for intravenous bolus administration should be given into the line of a fast running compatible infusion as this minimises the risk of venous irritation and extravasation.

5.5 Vinca alkaloids must be administered in a mini bag of 50ml sodium chloride or other compatible diluent under constant supervision for signs of extravasation.

5.6 The line should be flushed between drugs with compatible infusion solution.

5.7 Intravenous bolus injections should be given SLOWLY e.g. 5ml per minute.

5.8 Luer lock syringes must be used for the administration of all bolus chemotherapy.

5.9 Administration should be performed over a sterile towel / gauze swabs to protect skin and surfaces from potential cytotoxic leakage.

5.10 Prior to administration the patient should be advised of possible local or systemic adverse events and asked to report those immediately if the occur.

5.11 Observation of the insertion site should be maintained during administration.

6. Intravenous infusional chemotherapy

6.1 Chemotherapy drugs should be regarded as high risk infusion. Pumps used should be specifically designed for this purpose.

6.2 Giving sets should be primed (and flushed on completion of infusion) with a suitable compatible intravenous solution – never with the chemotherapy drug.

6.3 Intravenous administration sets should have Luer lock fittings.

6.4 Patency of the line should be confirmed (see section 5.3 above).

6.5 As for all aspects of chemotherapy administration a no-touch technique and personal protective equipment should be used.

6.6 When connecting infusions to giving sets, the giving set should be carefully inserted into the cytotoxic infusion at waist height over a clean washable tray, to minimise the risk of personal contamination in the event of a spillage.

6.7 The expiry of the drug and infusions should be checked and not be started if there is doubt that it will be infused within its expiry. Regular checking for evidence of deterioration e.g. discolouration, precipitations etc should occur.

6.8 Prior to administration the patient should be advised of possible local or systemic adverse events and asked to report those immediately if they occur.

6.9 The infusion site should be checked regularly for evidence of drug infiltration / extravasation.

6.9 The patient should be checked regularly for adverse reactions to the infusion.

7. Oral chemotherapy

7.1 The prescribing and dispensing of oral chemotherapy should be carried out and monitored to the same standards as those for all other chemotherapy.

7.2 Responsibility for the administration oral chemotherapy of those being treated in the out-patient setting lies with the patient or their carer. Therefore they must be prepared with adequate verbal and written information and 24 hour telephone contact numbers.

7.3 All pharmacy staff that are, or could be, involved with dispensing of oral chemotherapy must have access to full copies of the relevant protocols and ready contact to specialist oncology / haematology pharmacy advice.

7.4 Wherever possible oral chemotherapy will be supplied in blister or foil packed tablets or capsules.

7.5 Tablets or capsules should not be handled directly, all staff should use a ‘no touch’ technique to minimise the risks of exposure.

7.6 All oral chemotherapy should be taken with plenty of water and swallowed whole not chewed to avoid local irritation to the oral mucosa.

7.7 Tablets should not be crushed or capsules opened unless specific advice is sought to support this.

7.8 On wards or clinics oral doses of chemotherapy should be dispensed into a disposable medicine pot or cup prior to administration to a patient. Pots should be disposed of as clinical waste.

7.9 If loose powder or liquid is present in the dispensing container pharmacy should be informed and replacements requested.

7.10 Patients should be reviewed prior to every course of oral chemotherapy either by an oncologist / haematologist, specialist nurse or pharmacist.

7.11 Patients must be adequately counselled about drug storage and handling precautions whilst at home and keeping drugs out of reach of children and animals.

7.12 Patients should be advised that medicine spoons, oral syringes or cups should be reserved for chemotherapy treatment only and not used for the administration of other drug doses. They should be washed thoroughly between doses and safely disposed of after the treatment course.

7.13 It is the responsibility of the individual administering treatment to ensure that the patient understands:

a) how and when to take/omit medicines
b) what to do in the event of missing one or more doses
c) what to do in the event of vomiting after a dose
d) likely adverse effects and what to do about them
e) when and how to obtain further supplies
f) the role of their GP in their chemotherapy treatment
g) principles of safe storage and disposal

7.14 Dropped medicines should be picked up wearing gloves, put in a plastic bag and disposed of into a sharps bin. The area should be damp dusted with wet towels and disposed of as clinical waste. See Network Guidelines for the Management of Spillage of Cytotoxic Drugs www.birminghamcancer.nhs.uk/staff/clinical-guidelines/chemotherapy

8. Intrathecal chemotherapy

8.1 Only staff on the individual Trust intrathecal register will receive training. and once trained will be authorised to prescribe, dispense, issue, check or administer intrathecal chemotherapy.

8.2 All Trusts should have a local policy on the safe prescribing, handling and advice of intrathecal chemotherapy

8.3 All staff involved in the administration of intrathecal chemotherapy must have read the:

a) National Guidance on Safe Administration of Intrathecal Chemotherapy[13]

b) Local Trust Policy on the Safe Prescribing, Handling and Administration of Intrathecal Chemotherapy

9. Intravesical chemotherapy

9.1 Individual Trusts should have a local policy for intravesical chemotherapy.

9.2 Consideration must be given if the patient has heavy haematuria or a urinary tract infection or is immunosuppressed, due to the potential increase in side effects.[3]

10. Intra-cavity chemotherapy

10.1 May be given by junior doctors, following training with a specialist registrar or consultant.

10.2 A suitable catheter should be inserted into the cavity and serous fluid drained. The drug should be instilled and the patient rotated, if practical, on each side, back and front for approximately 15 minutes for each position, to evenly distribute the drug. It is not normally necessary to remove the drug.

11. Intramuscular injection

11.1 Care should be taken to ensure the smallest appropriate needle is used and positioned correctly when giving drugs by this route.

11.2 The 'Z' track technique should be used intramuscularly to prevent leakage into the skin.

11.3 Injection sites should be rotated to avoid irritation.

11.4 Ensure no leakage from the site – cover with a cotton wool ball / plaster if necessary.

11.5 Injection volumes should not normally exceed 4ml per site.

12. Subcutaneous Injection

12.1 Care should be taken to ensure the smallest appropriate needle is used and positioned correctly when giving drugs by this route.

12.2 Using a pinch technique administer the injection using a 90^{o} angle.

12.3 Injection sites should be rotated to avoid irritation.

12.4 Ensure no leakage from the site – cover with a cotton wool ball / plaster if necessary.

12.5 Injection volumes should not normally exceed 1 ml per site.

13. Topical

13.1 Topical cytotoxic drugs may be applied either directly to the skin or as ear or eye drops.

13.2 Topical agents do not lend themselves to closed systems, causing potential hazards to the individuals who prepare or apply them.

13.3 Gloves should be worn while handling or applying topical products and using cotton buds rather than fingers is essential. It is important to protect the normal skin and avoid the eyes and other mucous membranes during administration. The affected area should not be washed vigorously during the treatment[2] although risks may be small, patients should be counselled regarding the toxicity to normal skin and the risks of contamination via direct contact or clothing to other areas of skin or to the skin of other people.

13.4 Patients should receive information and instructions regarding their treatment to ensure they are aware of the potential hazards to their family and environment.

13.5 Unlicensed extemporaneously prepared paints, creams or lotions e.g. nitrogen mustard or carmustine are not recommended.

14. Intra-ocular

14.1 Cytotoxic drugs for intraocular chemotherapy e.g. 5FU for subconjunctival or intravitreal administration will be prepared by the pharmacy department. Intraocular chemotherapy will be administered by the consultant ophthalmic surgeon.

15. Eye drops

15.1 Cytotoxic eye drops will be prescribed and administered according to standard policy relating to ophthalmic preparations.

15.2 Unused drops should be dealt with as cytotoxic waste.

16. Miscellaneous routes of administration

16.1 Other routes of administration of cytotoxic material e.g.

a) intrahepatic
b) intracranial

c) intraarterial
d) regional infusion (e.g. isolated limb infusion)

16.2 These routes will be supported by appropriate policies and procedures as they are introduced into individual trusts.

17. Administration equipment – peripheral devices

17.1 Should be placed in the peripheral veins in the arm but may also be placed in the veins of the foot (used only in paediatric care). Veins of the lower extremities should not be routinely used in adults due to the risk of embolism and thrombophlebitis. [2]

17.2 The most appropriate site for the location of a peripheral cannula is considered the forearm. However, a large straight vein over the dorsum of the hand is preferable to a smaller vein in the forearm. Siting over joints should be avoided as tissue damage in this area may limit joint movement in the future. The antecubital fossa should never be used for the administration of vesicants because of the risk of damage to local structures such as nerves and tendons.

17.3 The smallest, shortest gauge cannula (24 or 22 gauge) should be used; it has been shown that the incidence of vascular complications increases as the ratio of cannula external diameter to vessel lumen increases. [3]

17.4 Metal needles / “butterfly needles” should never be used for administration of chemotherapy.

17.5 Prior to inserting a peripheral cannula the siting, condition of the vein, purpose of the infusion (that is the rate of flow required and the solution to be infused) and the duration of therapy should be considered.

17.6 Veins should feel elastic and refill when depressed and should be straight and free of valves to ensure easy advancement of the cannula.

17.7 A oncologist should be consulted and the decision documented prior to cannulation of the arm of a patient who has undergone mastectomy and/or axillary node dissection/radiotherapy or who may have an existing A-V fistula or may require future fistula formation. [3]

17.8 Subsequent cannulation should be made proximal to the previously cannulated site. [5]

17.9 Shaving of the arm prior to cannulation should not be performed because of potential for causing micro-abrasions which increase risk of infection. [1]

17.10 If unsuccessful after second attempt at cannulation, then help from a more experienced practitioner should be sought.

17.11 Current recommendations indicate that peripheral cannula should be resited every 72 hours[3]. In Oncology/Haematology patients venous access is often poor and in some circumstances there may be a requirement for PVC to remain insitu longer than the recommended 72 hours. On these occasions a risk assessment should be carried out and the decision clearly documented.

17.12 Full documentation of cannula size, position, number of attempts, contraindications, time and date of cannulation should be recorded in the patient's records. [1]

18. Administration equipment – Central Venous Access Devices (CVADs)

18.1 Please refer to the Network Guideline for the Care of Venous Catheters for the Administration of Anti-cancer Medication

19. Administration equipment – giving sets

19.1 Standard solution giving sets should be used for the majority of drugs, unless otherwise indicated by the drug companies. Exceptions include Paclitaxel, in which case non–PVC giving sets with a 5–micron filter must be used. Some drugs e.g. dacarbazine require special light protection for the giving set during the infusion.

20. Administration equipment – medical devices

20.1 Cytotoxic drugs should be infused using pumps designed for high-risk infusions. Positive pressure pumps should be avoided (with the exception of syringe drivers) unless specifically designed for the administration of cytotoxic drugs.

20.2 Staff using rate controlling devices will have received training and understand their use and limitations.

20.3 If elastomeric infusion devices are required, contact the pharmacy.

All guidelines referred to in this document can be accessed via the following link: http://www.birminghamcancer.nhs.uk/staff/clinical-guidelines/chemotherapy

References

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Monitoring of the guideline

Adherence to the Network guidelines may from time to time be formally monitored.

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