

GUIDELINE FOR MANAGEMENT OF EXTRAVASATION

Extravasation is a severe complication in the administration of cytotoxic chemotherapy. It causes pain, erythema, inflammation, discomfort and if left undiagnosed or inappropriately treated can lead to necrosis, secondary infection and functional loss of the tissue and/or limb concerned. This may also hinder future treatments in some cases. If treatment is delayed, surgical debridement, skin grafting and even amputation may be the consequence

1. STOP the injection immediately, but leave the cannula in place
2. Classify the agent using the tables below and treat as directed (if not listed below consult Pharmacy)
3. Collect extravasation kit
4. Apply COLD pack immediately (WARM if non DNA binding Vesicant)
5. Aspirate as much fluid as possible through the cannula, try to draw back about 3 to 5ml of blood
6. Mark the extravasation area with a permanent marker pen
7. Contact the patient's doctor
8. Remove the cannula only after appropriate treatment

Vesicants DNA-binding

Amsacrine
Bendamustine
Carmustine
Dacarbazine
Dactinomycin
Daunorubicin
Doxorubicin
Epirubicin
Idarubicin
Mitomycin C
Mustine
Trabectedin
Treosulfan

AIM: LOCALISE & NEUTRALISE

- Neutralise the infusate by applying a thin layer topical DMSO to the marked area using a cotton bud. Do not use DMSO if blistering present.
- Allow the DMSO to dry, and then cover with a non-occlusive gauze dressing, this should be applied within 10-25 minutes
- Apply a cold pack for 30 minutes. Repeat every 4 hours for 24 hours to help localise the infusate
- 3 hours after first DMSO application apply hydrocortisone 1% cream. Repeat every 6 hours for 7 days
- Elevate the limb

Consider referral to Hand/Plastic Surgeon

Vesicants Non-DNA-binding

Cabazitaxel
Nab-paclitaxel
Paclitaxel
Vinblastine
Vincristine
Vindesine
Vinflunine
Vinorelbine

AIM: DISPERSE & DILUTE

- Give several subcutaneous (or intradermal) injections of 150 – 1500 IU of hyaluronidase diluted in 1 mL sterile water as 5 separate 0.2ml injections around the periphery extravasated area to dilute the infusate.
- Use 25 to 27 gauge needle and change after each injection
- If there is no blood return in the affected IV catheter, consider infusing 0.4ml of hyaluronidase mixture directly through the affected IV catheter before removing the catheter and administering the remainder of the dose subcutaneously around the periphery extravasation
- Apply hydrocortisone 1% cream every 6 hours for as long as erythema persists.
- Elevate the limb
- Apply a warm pack to the affected area for 30 minutes 4 times daily for 1 to 2 days

NB. Administration of hyaluronidase should begin within 1 hour of extravasation for best results

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Irritants¹

Arsenic Trioxide
Cyclophosphamide
Liposomal Daunorubicin
Liposomal Doxorubicin
Etoposide
Fluorouracil
Ganetespib
Ifosfamide
Mephalan
Mitoxantrone
Streptozocin

Possible irritants²

Carboplatin
Cisplatin
Docetaxel
Gemtuzumab Ozogamicin
Irinotecan
Oxaliplatin*
Topotecan

AIM: LOCALISE

- Apply cold pack for 30 minutes every 4 hours for 24 hours (*for oxaliplatin – treat using a warm compress to avoid the risk of paraesthesia which can be precipitated by cold)
- Apply hydrocortisone cream 1% every 6 hours for 7 days or as long as erythema persists

Non-vesicants¹

Aflibercept
Asparaginase
Bleomycin
Bortezomib
Brentuximab vedotin
Cladribine
Clofarabine
Cytarabine
Eribulin
Etoposide phosphate
Fludarabine
Gemcitabine
Inotuzumab ozogamicin
Interferons
Interleukin-2
Methotrexate
Mifamurtide
Monoclonal antibodies
Nelarabine
Pemetrexed
Pentostatin
Raltitrexed
Temsirrolimus
Thiotepa
Trastuzumab emtansine
Vosaroxin

AIM: SYMPTOMATIC RELIEF

- Elevate the limb
- Consider applying a cold pack if local symptoms occur
- Apply hydrocortisone cream 1% four times each day if erythema is present

¹ Any agent extravasated in high enough concentration may be an irritant

² There have been few reports of these agents acting as irritants, but there is no clear evidence for this

NOTE: For those medications that are not considered a vesicant but cause prolonged patient discomfort at the infusion site, it is strongly recommended that a central line be placed

NB. Causes which may commonly lead to misdiagnosis include: Allergic reaction / flare reaction / vessel reaction / venous shock / phlebitis etc

- Complete documentation and send to nominated person:
Nursing +/- Medical notes / records
Drug chart
Incident form (DATIX form)
Patient information leaflet
- Give analgesia if necessary
- Arrange a follow-up appointment. The extravasation should be reviewed after it has occurred at:
24 hours
1 week
3-4 weeks and then subsequently until resolution of erythema if present
- Contact pharmacy for replacement drugs

The treatment proposed above is "first aid" only. Seek further advice – early review by plastic surgeon is advisable, consider medical photography

For latest version see
www.eastmidlandscancernetwork.nhs.uk

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