

Your nearest extravasation kit is located:

# 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  
Dacarbazine  
*Dactinomycin*  
Daunorubicin  
Doxorubicin  
Epirubicin  
Idarubicin  
Mitomycin C  
Mrabectidin

### 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  
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 (\*for **paclitaxel** only – treat using a cold compress applied for 30 minutes and apply hydrocortisone cream 1% every 6 hours for 7 days or as long as erythema persists).
- 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

Consider referral to Hand/Plastic Surgeon

## Irritants<sup>1</sup>

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

## Possible irritants<sup>2</sup>

Carboplatin  
Cisplatin  
Docetaxel  
Gemtuzumab Ozogamicin  
Irinotecan  
Oxaliplatin\*  
Topotecan

## Vesicants Non-DNA binding

Paclitaxel

## Vesicants DNA binding

Bendamustine  
Busulfan  
Carmustine  
Chlormethine (Mustine)  
Treoosulfan

### AIM: LOCALISE

- Apply cold pack for 30 minutes every 4 hours for 24 hours (\*for **oxaliplatin** only – 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

For VESICANTS consider referral to Hand/Plastic Surgeon

## Non-vesicants<sup>1</sup>

Aflibercept  
Asparaginase  
Bleomycin  
Bortezomib  
Brentuximab vedotin  
Carfilzomib  
Cladribine  
Clofarabine  
Cytarabine  
Eribulin  
Etoposide phosphate  
Fludarabine  
Gemcitabine  
Immunotherapy  
Inotuzumab ozogamicin  
*Interferons*  
*Interleukin-2*  
Methotrexate  
Mifamurtide  
*Monoclonal antibodies*  
Nelarabine  
Pemetrexed  
Pentostatin  
Pixantrone  
Raltitrexed  
Temsitrolimus  
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

<sup>1</sup> Any agent extravasated in high enough concentration may be an irritant

<sup>2</sup> 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.eastmidlandscanceralliance.nhs.uk/cancer/chemotherapy](http://www.eastmidlandscanceralliance.nhs.uk/cancer/chemotherapy)

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