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Guide to managing the extravasation of antineoplastic agents

English summary

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Direction des services de santé et de l'évaluation des technologies

Québec

This is the English summary of the guidance entitled Guide de prise en charge de l'extravasation des agents antinéoplasiques - Mise à jour - published in April 2019.

The complete version of this guidance (in French) is available on the website of INESSS in the Publications section.

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SUMMARY

Background and objectives

Extravasation is a potentially serious complication that can occur during the administration of an antineoplastic agent. Little evidence is available to support the development of an optimal management protocol.

This guide to managing antineoplastic agent extravasation has been updated in collaboration with the Guidelines and Guidance Subcommittee of the Comité de l'évolution de la pratique des soins pharmaceutiques (CEPSP) in the Direction générale de cancérologie (DGC) of the Ministère de la Santé et des Services sociaux (MSSS). The objective is to make recommendations tailored to the Québec context concerning the management and treatment of extravasation that occurs during the administration of antineoplastic agents to cancer patients.

Method

A review of the scientific literature was conducted in the PubMed database. The period covered by the update is from 2013 to January 2019. The literature on the treatment of extravasation is very often empirical, anecdotal and debated. For this reason, the clinical practice recommendations and expert consensus statements published by certain international organizations and cancer agencies were included as well. They are from, among others, the British Columbia Cancer Agency (BCCA), the Chemotherapy Network Group (CNG) of the National Health Service (NHS), the Hôpitaux universitaires de Genève (HUG), the North of England Cancer Network (NECN) Chemotherapy Group of the NHS, the Cancer Institute of New South Wales (NSW), the Oncology Nursing Society (ONS), the European Society of Medical Oncology (ESMO) in collaboration with the European Oncology Nursing Society (EONS), the Humber and Yorkshire Coast Cancer Network (HYCCN), the West of Scotland Cancer Advisory Network Clinical Leads Group (WOSCAN) and the Gippsland Oncology Nurses Group (GONG).

Results

Determining the potential risk factors, taking preventive measures and following the methods of administration can help reduce the risk of extravasation. Recognizing and managing the symptoms in patients with this complication is essential. Giving adequate information on the symptoms to watch for to patients and to staff responsible for administering antineoplastics and preventing and managing extravasation are equally essential.

Extravasation can be treated with the use of cold or warm dry compresses and of various antidotes (dexrazoxane, dimethylsulfoxide [DMSO] and hyaluronidase), which are chosen on the basis of the administered agent. A surgical approach should be considered when conventional treatment with antidotes is insufficient or if the patient has severe morbidities.

Patients are followed to assess the progression or regression of their symptoms and to take the appropriate measures. The duration of follow-up varies according to the clinical progress observed. The use of a validated template will help optimize the data-gathering.

Best practices synthesis and proposed adaptation for practice in Québec

Given the evidence available at this time and the guidelines published by various organizations (BCCA, CNG, HUG, NECN, Cancer Institute NSW, ONS, ESMO-EONS, HYCCN, WOSCAN and GONG), INESSS makes the following recommendations:

General

The following measures help prevent and minimize the sequelae of antineoplastic agent extravasation:

- Administer antineoplastic agents at facilities where the staff are qualified to do this.
- Adequately train staff are responsible for administering antineoplastic agents on preventing and managing extravasation.
- Ensure that a written and easily accessible extravasation treatment protocol is available at facilities where antineoplastic agents are administered to patients. It is strongly recommended that one or more extravasation treatment kits be on site.
- Explain to patients the potential risk of extravasation and the preventive measures and train them to recognize the first symptoms so that they can notify medical staff immediately.
- Administer the vesicants first when several different agents are to be administered, if the protocol allows this.

Treatment

Extravasation of an antineoplastic agent administered via a peripheral line

- The choice of type of compress to be used is made on the basis of the extravasated antineoplastic agent, as follows:
  - Cold dry compress (0^{o}C, 20 to 30 minutes at a time, 4 times a day for the first 24 to 48 hours after the extravasation):
    - Alkylating agents
    - Irritants (with the exception of oxaliplatin)
    - Non-irritants (a single application, then as needed)
    - Anthracyclines
    - Antibiotics (mitomycin, dactinomycin, mitoxantrone and streptozocin)
    - Amsacrine
    - Taxanes

- Warm dry compress (44 to 50°C, 20 to 30 minutes at a time, 4 times a day for the first 24 to 48 hours after the extravasation):
  - Vinca alkaloids
  - Oxaliplatin.

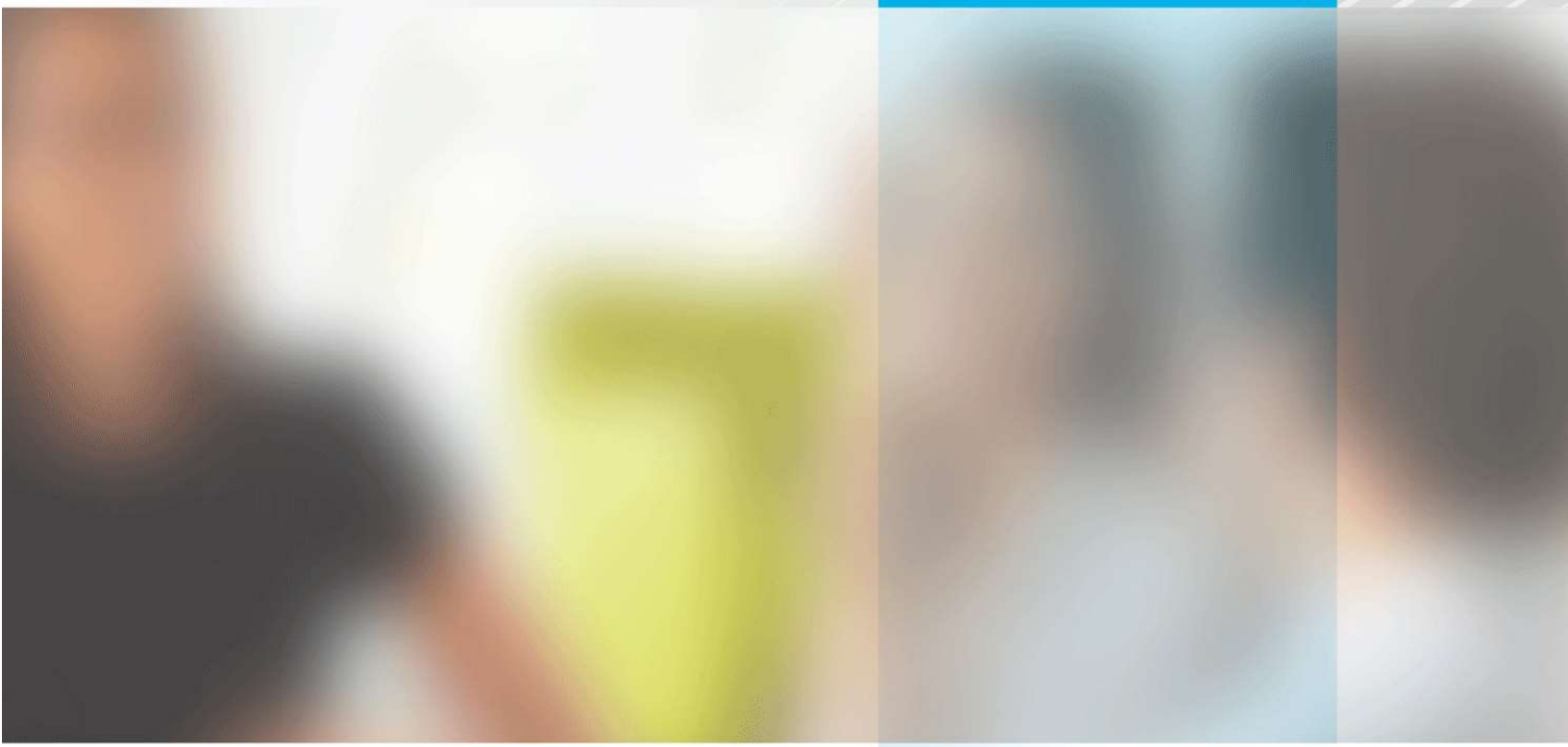
- Dexrazoxane (1000 mg/m^2 [maximum: 2000 mg/dose] on day 1 and day 2, then 500 mg/m^2 [maximum: 1000 mg/dose] on day 3) is used to treat anthracycline extravasation. The Registre des antidotes du Québec (Québec Antidote Registry) can be consulted to find out which facilities keep this antidote in stock. The procedure for consulting the registry is available on the website of the Institut national de santé publique du Québec (INSPQ) at https://www.inspq.qc.ca/toxicologie-clinique/registre-des-antidotes-du-quebec.
- DMSO (99%, 4 drops/10 cm^2 every 6 to 8 hours for 7 to 14 days, starting within the first 10 minutes after the extravasation) is used to treat the extravasation of the following agents:
  - Mitomycin
  - Anthracyclines, if treatment with dexrazoxane is not possible within the first 6 hours after the extravasation.
- Hyaluronidase (150 to 1500 units (U); 150 U/ml via the line or 1500 U/ml in 5 injections of 0.1 ml to 0.2 ml) is used to treat vinca alkaloid extravasation. The Registre des antidotes du Québec can be consulted to find out which facilities keep this antidote in stock. The procedure for consulting the registry is available on the INSPQ's website.
- Systemic corticosteroids are not used to treat extravasation.
- Topical corticosteroids are used, if necessary, to treat inflammation around the site of extravasation, except in cases of etoposide or vinca alkaloid extravasation.
- Request a surgical consultation if warranted by the patient's condition.
- The procedure for managing the extravasation of an antineoplastic agent administered via a peripheral line set out in protocol A-1 is generally employed (see Appendix A).

Extravasation of an antineoplastic agent administered via a central line

- The diagnosis is confirmed by venography or imaging.
- Dexrazoxane (1000 mg/m^2 [maximum: 2000 mg/dose] on day 1 and day 2, then 500 mg/m^2 [maximum: 1000 mg/dose] on day 3) is used to treat anthracycline extravasation.
- The procedure for managing the extravasation of an antineoplastic agent administered via a central line set out in protocol A-2 is generally employed (see Appendix A).

Follow-up and documentation

- Each case of antineoplastic agent extravasation is documented in the patient's chart and exhaustively reported. The use of a template indicating all the information to be gathered on the extravasation is strongly recommended.
- An incident or accident declaration report (Form AH-223) is completed as per the institution's directive.
- A follow-up is done every 24 to 48 hours for the first week, then every week thereafter if there is improvement, this until the symptoms resolve.



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