

# Vesicant Extravasation Part II: Evidence-Based Management and Continuing Controversies

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**Purpose/Objectives:** To review the literature, synthesize current recommendations, and discuss remaining controversies regarding vesicant extravasation management.

**Data Sources:** Published evidence-based reports, clinical articles, and anecdotal case reports about antineoplastic and nonantineoplastic vesicant agent management.

**Data Synthesis:** Prevention of vesicant extravasation sequelae requires knowledge about vesicant extravasation manifestations and differentiation of vesicant extravasation from other local IV site reactions. When evidence is weak or missing, logical application of data-based or empirical management strategies is critical. Actions may include timely administration of subcutaneous or topical antidotes, comfort measures, and surgical interventions to minimize the extent of tissue damage and morbidity should extravasation occur.

**Conclusions:** Vesicant extravasation and sequelae constitute a complex patient problem. Clinicians should strive to prevent extravasation or seek to minimize injury should it occur. To this end, clinicians must demonstrate awareness of its risks and use specialized knowledge when administering vesicant agents.

**Implications for Nursing:** Nurses who administer vesicant agents should understand the nursing and collaborative actions that should be taken to minimize patient morbidity, pain, and disability.

Unrecognized, inadvertent extravasation by vesicant agents may lead to severe and progressive tissue damage if timely and appropriate local therapies are not implemented. Thus oncology and other nurses must be knowledgeable about which antineoplastic agents and other noncancer-related drugs and solutions (see Figure 1) can cause tissue damage if administered via IV. Nurses who administer vesicant agents must demonstrate adequate clinical knowledge and skills (see Part I, page 1134). In addition, nurses must be able to differentiate extravasation from other local reactions.

The reported incidence of vesicant extravasation is relatively low, and the likelihood that an individual nurse may be involved in extravasation is very small. Therefore, nurses and physicians may find differentiating between suspected and actual extravasation difficult. Furthermore, management recommendations, particularly for surgical interventions, have not been incorporated into current clinical practice. This article will discuss differentiating extravasation from other reactions and examine and organize the evidence for management of vesicant agents with locally or systemically administered antidotes, conservative measures, and surgical procedures.

## Key Points . . .

- Certain chemotherapy drugs and some nononcology agents have vesicant properties and, thus, are capable of causing progressive and persistent painful ulceration if incorrectly administered.
- Initial manifestations of extravasation may be subtle, and extravasation must be differentiated from other local paravenous reactions.
- Little evidence exists to guide management of vesicant extravasation; therefore, most suggestions to use local comfort measures, local antidotes, debridement, or other surgical interventions remain empirical and controversial.

## Distinguishing Extravasation From Other Local Reactions

Confirming extravasation during drug administration can be challenging because manifestations vary. Furthermore, extravasation must be distinguished from other local reactions, particularly flare and recall. Patients with irritant reactions typically report aching, pain, or tightness; the vein may be erythematous, dark, and accompanied by swelling and loss of blood return (Goodman & Peterson, 1997; Polovich, White, & Kelleher, 2005). Flare reactions are rare (3%), localized,

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