

**FAST FACTS AND CONCEPTS #297**  
**TERMINAL HEMORRHAGE PREPARATION AND MANAGEMENT**  
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**Introduction:** Terminal hemorrhage is defined as a major hemorrhage that is likely to rapidly result in a patient's death due to a massive loss of circulating volume (1). Although it is relatively rare, it can be profoundly distressing for patients, families, and care providers. This *Fast Fact* will review the essential preparation and care components in at-risk patients. These principles should also apply to the care of terminally ill patients with refractory, yet less catastrophic bleeding. See *Fast Fact # 251* on management of a carotid blowout, which is a specific circumstance of terminal hemorrhage.

**Incidence and etiology:** Patients with head and neck cancers have the highest incidence as carotid rupture can occur in 3-4%. Other etiologies are: a) anatomical (e.g. from local tumor erosion), b) systemic (e.g. due to thrombocytopenia from bone marrow infiltration) or c) combined. Common presentations are hemoptysis in cancer or cystic fibrosis, gastro-intestinal bleeding in liver disease, and vaginal bleeding in cervical or uterine cancer.

**Risk factors and clinical manifestations:** Retrospectively, clinicians may recognize a “sentinel” or “herald” bleed of often trivial amount occurring 24-48 hours before a major arterial bleed. Naturally this may lead clinicians to worry they had not done enough to prepare for its dramatic presentation. Prospectively, however, it can be clinically challenging to appropriately address “herald bleeds.” Impending arterial rupture sometimes may be identified by the presence of a ballooning or visible pulsation in arterial vasculature. Yet in most cases, true catastrophic terminal hemorrhage events do not occur even in at risk patients. Hence when preparing patients and/or families of the possibility of a terminal hemorrhage, it is also important for clinicians to allay anxiety by discussing the rarity of the event.

**Management:** While there is scant clinical research to guide clinical management of terminal hemorrhage, initial measures include identification of the source of bleed; applying pressure to the source if appropriate; ensuring a care provider is always present to offer calm direction; and using dark towels to camouflage bleeding. Pharmacologic management may be useful in slower bleeds, but it should not detract from non-pharmacologic approaches. A semi-structured interview of nurses who cared for a patient who terminally hemorrhaged suggested that patients bled out so quickly that pharmacology had no impact on comfort and may have distracted from the reassurance and nursing interventions which could have been more effective (2). Regardless, a three step approach is proposed by many experts:

**1. Preparation for the event**

- Identify “at-risk” patients: those with a herald bleed, head and neck cancers, hematological cancers, or tumors encasing major vessels. In home hospice settings, consider use of crisis care if terminal hemorrhage is strongly anticipated in 1-2 days.
- Address modifiable risk factors by ensuring anticoagulants, NSAIDs, and aspirin have been discontinued. Consider use of platelet transfusions, Vitamin K, or FFP if such interventions are easily available and clinically warranted immediately after a herald bleed. If consistent with goals and/or medically feasible, consider the use of radiation or interventional therapies such as embolization or coiling to curtail the risk of bleeding.
- Formulate a plan of action which includes what to expect with regards to prognosis and symptoms when hemorrhage occurs; who to contact; and whether life support will be pursued.
- Communicate this plan with the patient, caregivers, and healthcare providers.
- Prepare a “crisis pack” containing:
  - Sedatives and analgesics: pre-drawn and at bedside for rapid palliation of dyspnea or pain.
  - Large dark towels, a dark basin, and gloves.
  - Suction device – typically only beneficial when patients are choking or aspirating on blood.
  - Warm blankets – patients are likely to be cold from ensuing hypotension.
  - Face cloth – to clean patients face and mouth.
  - Yellow bags – for disposal of waste and blood stained materials

**2. *Managing the event:*** The “ABC” algorithm: **A – Assurance; B – Be There; C – Comfort and Calm.** Reassure the patient you will not abandon them and provide a comforting touch when appropriate. Control symptoms when possible using pre-drawn “crisis” medications. Consider positioning family members and children so that they can be in close physical contact with the patient but not in direct visual view of the catastrophic bleed. If possible, position the patient so that bleeding sites are against gravity and blood pooling in dependent areas is minimized.

**3: *After the event:*** Provide bereavement support to all involved, including family members who may be traumatized from witnessing the event and subsequently at risk for complicated grief and post-traumatic stress symptoms (see FF # 254). In the home setting, hospice teams can be of great benefit to the bereaved by properly disposing of clinical waste and using appropriate personal protective equipment.

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