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JUST THE FACTS

Just the facts: withdrawal of life-sustaining therapy in the ED

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Clinical scenario

An 82-year-old woman is brought by paramedics to your community emergency department (ED) with a Glasgow Coma Scale (GCS) of 4. She was found beside her bed at her retirement home, with severely altered level of consciousness. There is no documented code status available. On initial examination, she is hypertensive and tachycardic with normal glucose. You intubate her, as she is not protecting her airway and proceed with laboratory tests and imaging. Computed tomography (CT) of her head demonstrates a large left hemispheric intracranial hemorrhage with intraventricular extension and mass effect. The neurosurgeon at the tertiary care hospital informs you that no surgical intervention would improve this patient s devastating neurological outcome. Shortly after, the woman s family arrives. They are quite clear that she would not want to prolong her life in this situation, with little to no chance for a meaningful recovery.

What is withdrawal of life-sustaining therapy?

Life-sustaining therapy includes all those therapies that support or replace vital organ function. These treatments do not restore organ function, and the provision of life-sustaining therapy typically requires skilled staff and resources. Common examples of life-sustaining therapy seen or initiated in the ED include hemodialysis, mechanical ventilation (both invasive and non-invasive), and vasopressors.

Withdrawal of life-sustaining therapy, therefore, is the process by which these therapies are discontinued. Typically, this is done with the knowledge that the patient will die from the underlying disease process or complications as a result [1]. Withdrawal of life-sustaining therapy should be clearly distinguished from medical assistance in dying (MAID), as the latter involves the active provision of medication to end the life of a capable patient who has requested MAID.

In what context does withdrawal of life-sustaining therapy typically occur?

Withdrawal of life-sustaining therapy is often recommended when it is clear that the expected outcome from ongoing life-sustaining therapy and other treatments would not be acceptable for the patient. This may be because ongoing ife-sustaining therapy is felt to be futile, i.e., there is no expectation that despite treatment the patient will have an acceptable recovery for them. Withdrawal of life-sustaining therapy does not, however, entail withdrawal of all treatments. Patients may still choose to continue some treatments, or may require intensification of symptom management once withdrawal of life-sustaining therapy is initiated.

The decision to recommend withdrawal of life-sustaining therapy is nuanced and may require subspecialist opinion on prognosis. Even among patients with devastating brain injuries, prognosis can be unclear in the early stage. The Canadian Association of Emergency Physicians statement from 2020 indicates that withdrawal of life-sustaining therapy in the ED for patients with severe brain injury should only be offered in specific situations. These situations include: if ongoing care is inconsistent with the patient s wishes, if injuries render the patient significantly physiologically unstable, or if the patient has other comorbidities that would make it inappropriate for them to receive ongoing intensive care unit (ICU) care regardless [2]. The French Society of Emergency Medicine also suggests that if there is any

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uncertainty about a patient s goals of care or their prognosis, then they should be offered a trial of ICU therapy and time, rather than proceeding with withdrawal of life-sustaining therapy in the ED [3].

Who consents to withdrawal of life-sustaining therapy?

In Western biomedical ethics, there is no clear difference between withholding life-sustaining treatment and withdrawing it. However, for families and providers alike, there may be a significant psychological difference between these two.

Withdrawal of life-sustaining therapy is a treatment decision that, if possible, requires consent from either the patient if they are capable or their substitute decision maker. The Supreme Court decision on the case of *Cuthbertson v. Rasouli* in 2013 established that physicians must obtain consent prior to withdrawal of life-sustaining therapy for a patient who is expected to die imminently upon discontinuation of that therapy [4]. The Canadian Critical Care Society Ethics Committee has, however, indicated this case was narrow in its scope and does not provide guidance on all withdrawal of life-sustaining therapy decisions. The Committee states that if treatment will not be medically effective, the physician is not obliged to begin, continue, or maintain the treatment. [1]

What special considerations are necessary prior to withdrawal of life-sustaining therapy?

Along with the discussion around withdrawal of life-sustaining therapy, patients and their families should be offered a conversation about organ donation. The ED is a well-documented source of missed opportunities for organ donation, often because withdrawal of life-sustaining therapy occurs before referral to an organ donation organization is even considered [5]. The treating physician does not need to carry out this discussion themselves, but should offer the opportunity to speak in further detail with an organ donation organization prior to withdrawal of life-sustaining therapy.

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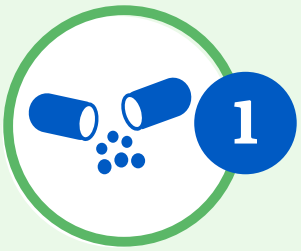
WLST process resembles the provision of end-of-life care in other situations and is within the scope of all Emergency Department physicians.



Medications

- analgesia and dyspnea: opioids
- sedation: benzodiazepines
- assess RASS and CPOT prior to administration
- vasopressors and inotropes weaned

Intubated patients

- ensure that paralytic medication has been metabolized
- wean to spontaneous mode of ventilation, with minimal O2 or additional pressure support
- medications for stridor (i.e. nebulized epinephrine) or dyspnea should be available

Other considerations

- for patients with ICDs, place a magnet on the ICD to deactivate it
- perform a debrief with the staff members caring for these patients

Infographic by Hans Rosenberg

How is withdrawal of life-sustaining therapy performed in the ED?

There is no ED-specific guidance on withdrawal of life-sustaining therapy, but the Canadian Critical Care Society has provided guidelines on what this process entails [6].

Much of the withdrawal of life-sustaining therapy process resembles the provision of end-of-life care in other situations and is within the scope of all ED providers, from a community setting to tertiary care. Patients should have analgesia, typically opioids as first line, available for evidence of pain or dyspnea. Sedation, often benzodiazepines, may be required if agitation is present. All these symptoms should be scored quantitatively using validated tools, such as the Critical Care Pain Observation Tool (CPOT) and the Ramsay Agitation and Sedation Scale (RASS), prior to medication administration.

Vasopressors and inotropes should be weaned and then discontinued, ensuring the patient is comfortable during this process. For patients who have an implantable cardioverter-defibrillator (ICD), consider placing a magnet on the ICD to deactivate it and avoid any unintended shocks in case of any dysrhythmias that occur at end of life.

For withdrawal of life-sustaining therapy in the patient who was intubated in the ED, the provider must ensure that any paralytic medication given for induction has been metabolized. Patients are typically weaned to a spontaneous mode of ventilation, with minimal oxygen or additional pressure support. If they are comfortable at this point, they may be extubated. Medications for stridor (i.e., nebulized epinephrine) or dyspnea post-extubation should be readily available. Alternatively, the endotracheal tube can be left in place and the patient simply disconnected from the ventilator, especially in cases where there may be concern about airway patency (for example airway burns).

It can be very difficult to predict how long the dying process will take, and patients who do not pass away within hours may require admission to a facility where skilled end-of-life care can be provided.

Lastly, emergency physicians should consider a debrief with the staff members caring for these patients. This type of end-of-life care is emotionally and physically taxing for the team. However, being able to provide this care in the ED may minimize disruptive transfers, hospital admissions, and is just as important a part of patient-centred care as a resuscitation.

Case resolution

After discussion with the patient s family, you decide to proceed with withdrawal of life-sustaining therapy which is in keeping with her previous wishes. They agree to speak with the local organ donation agency prior to withdrawal of life-sustaining therapy, but she is not felt to be a candidate for donation after cardiac death. You pre-brief the staff caring for her as well as her family in terms of what withdrawal of life-sustaining therapy looks like. After confirming that enough time has passed and that the rocuronium given for induction has long been metabolized, you write orders for withdrawal of life-sustaining therapy, including analgesia and sedation if needed. The respiratory therapist extubates the patient and the family sits with her until she passes away 2 h later.

Declarations

Conflict of interest The authors declare that no funding was received for this research and that there are no conflicts of interest.

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