

Prise en charge médicale du donneur d'organes en réanimation

La mort encéphalique est un diagnostic clinique

1. Il n'est pas nécessaire de connaître la cause du coma
2. Les drogues anesthésiantes (sédation et analgésie) doivent être interrompues pour établir le diagnostic
3. Des mouvements peuvent être observés en mort encéphalique
4. L'instabilité hémodynamique s'installe lors de l'évolution vers la mort encéphalique
5. Le diabète insipide et l'hypothermie marquent souvent le début de la mort encéphalique

Améliorer la détection

- Mettre en place des procédures d'appel...

The poster features a pink background with a repeating heart pattern. At the top left is the 'donatelife' logo, which consists of three white arrows forming a circle around a heart. To the right of the logo, the words 'clinical trigger' are written in a large, white, sans-serif font. Below this, a white arrow points to the right with the text 'Have you given your patient the opportunity to G.I.V.E?'. The acronym 'G.I.V.E.' is displayed in four large, black, bold letters, each within its own grey rectangular box. Below each letter is a pink box containing a clinical criterion: 'GCS ≤5' under 'G', 'Intubated' under 'I', 'Ventilated' under 'V', and 'End of life care' under 'E'. At the bottom left, three black arrows point to the right, containing the text: 'Due to irrecoverable brain injury', 'With age <80 years', and 'Family discussion on end of life care'. At the bottom right, a white box with a black border contains the following text: 'If your patient meets the Clinical Trigger: In ED – Medical Staff contact ICU Registrar: Ext 1010 or pager 4824 Always document your discussions in the patient notes'. At the very bottom left, a pink bar contains the text 'Endorsed by ACEM | ANZICS | College of Intensive Care Medicine | ACCCN'.

clinical trigger

Have you given your patient the opportunity to G.I.V.E?

G	I	V	E
GCS ≤5	Intubated	Ventilated	End of life care

Due to irrecoverable brain injury → With age <80 years → Family discussion on end of life care

If your patient meets the Clinical Trigger:
In ED – Medical Staff contact ICU Registrar:
Ext 1010 or pager 4824
Always document your discussions in the patient notes

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TABLE 1. Checklist for Determination of Brain Death

Prerequisites (all must be checked)

- Coma, irreversible, and cause known
- Neuroimaging explains coma
- CNS-depressant drug effect absent (if indicated, toxicology screen; if barbiturates given, serum level $< 10 \mu\text{g/mL}$)
- No evidence of residual paralytics (electrical stimulation if paralytics used)
- Absence of severe acid-base, electrolyte, and endocrine abnormality
- Normothermia or mild hypothermia (core temperature, $> 36^\circ\text{C}$)
- Systolic blood pressure > 100 mm Hg
- No spontaneous respirations

Management of the Potential Organ Donor in the ICU: Society of Critical Care Medicine/American College of Chest Physicians/Association of Organ Procurement Organizations Consensus Statement

donor, based on the available literature and expert consensus. (*Crit Care Med* 2015; 43:1291–1325)

Key Words: critical care; organ donor; organ transplantation

Si la mort encéphalique est confirmée (clinique et paraclinique)

- Il est préférable que le réanimateur rencontre les proches pour annoncer la mort
- La coordination de prélèvement doit être associée à l'entretien
- En cas d'opposition au prélèvement d'organes, le donneur décédé doit rester intubé
- Le donneur potentiel doit être pris en charge selon une démarche médicale et soignante standardisée (dans chaque service de réanimation)

TABLE 3. Examples of Clinicians Who Should Prompt Notification of Procurement Organizations

At the initial indication that a patient has a nonrecoverable neurologic injury (e.g., absent cranial nerve reflexes)

As soon as a formal “brain death” examination is completed

Before initiating a discussion that may lead to life-sustaining therapy

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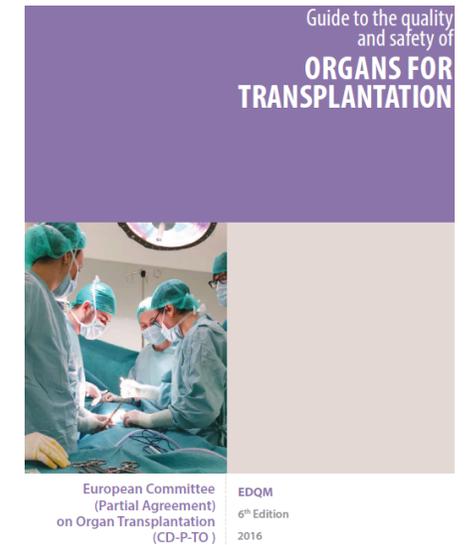
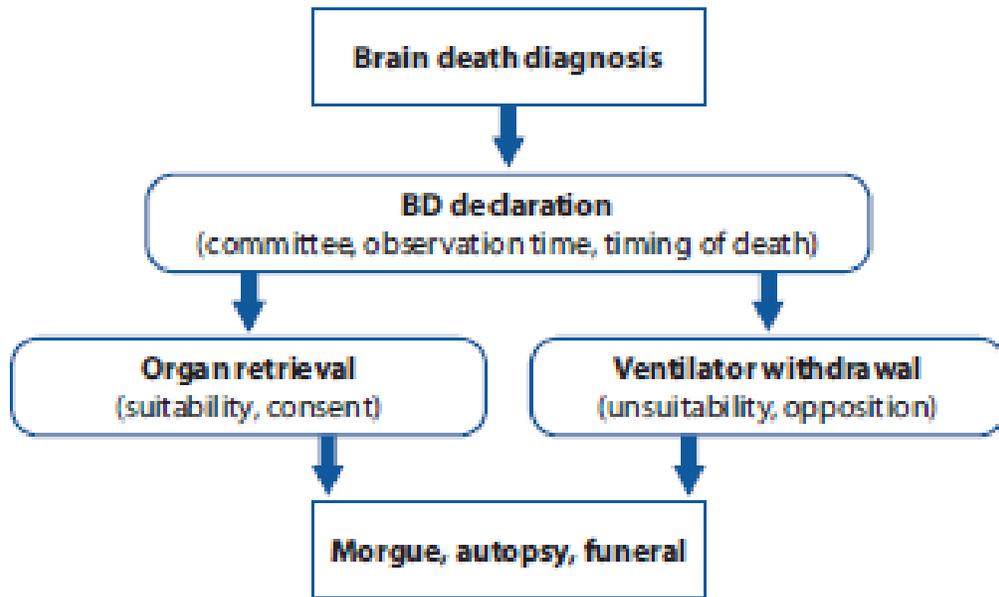
Table 4.3. A Six-Step Protocol for Delivering Bad News

Breaking the bad news into steps

S	Setting. Pick a private location.
P	Perception. Find out how the family views the (brain) death and the planned organ donation.
I	Invitation. Ask whether and how much the family wants to know.
K	Knowledge. Warn before disclosing bad news.
E	Emotions. Respond to the family’s emotions using empathy and validation.
S	Strategy/Summary. Once they know, include family’s acceptance of donation.

Source: SPIKES (adapted) [15].

Figure 3.2. Management algorithm of brain death



[33], particularly when BD is not followed by organ donation. In this case, physicians should act wisely and humanely, explaining the situation to the relatives, making it clear that withdrawal of mechanical ventilation will not make the patient die but that continued ventilation is unnecessary, and therefore inappropriate, for a patient already dead. The only

Death should be declared when it is confirmed by neurologic criteria, not at the time when the ventilator was removed or at the time of circulatory arrest.

Concernant la réanimation du donneur en mort encéphalique

- Il n'est pas utile d'équiper le donneur avec une voie veineuse centrale et un cathéter artériel
- N'occupe le plus souvent que 24 à 48 heures de prise en charge en réanimation
- Permet le plus souvent de sauver 2 ou 3 vies pour quelques heures de réanimation
- Nécessite une surveillance clinique par heure et biologique par 4 à 6h

REVIEW ARTICLE

CURRENT CONCEPTS

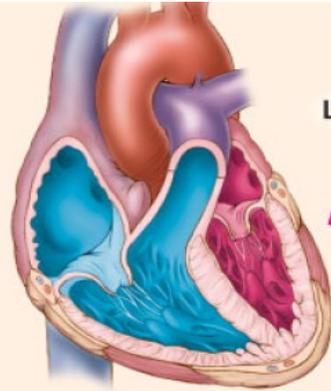
Care of the Potential Organ Donor

Kenneth E. Wood, D.O., Bryan N. Becker, M.D., John G. McCartney, M.D.,
Anthony M. D'Alessandro, M.D., and Douglas B. Coursin, M.D.

Venous
volume
reservoir



Right heart



Left heart



Arterial
resistance
system

Hypovolemia

Absolute hypovolemia

Initial injury

Inadequate resuscitation

Fluid leaking into
interstitial space

Decreased intravascular
oncotic pressure after
crystalloid resuscitation

Treatment for intracranial
pressure

Fluid restriction

Urea

Diuretics

Mannitol

Hyperglycemia-induced
osmotic diuresis

Diabetes insipidus

Hypothermic "cold" diuresis

Effective hypovolemia

Loss of vasomotor tone and
pooling in venous
capacitance bed

Hypothermia treated with
rewarming

Cardiac dysfunction

Preexisting disease

Initial injury

Myocardial contusion

Pericardial tamponade

Myocardial ischemia or
infarct

Process of brain death

Catecholamine damage

Ischemia-reperfusion
injury

Metabolic depression

Acidosis

Hypothermia

Hypophosphatemia

Hypocalcemia

Hypoxia

Endocrinopathy of brain
death

Volume overload resulting in
congestive heart failure

Arrhythmias

Catecholamines

Ischemia

Hypokalemia

Hypomagnesemia

Vasodilatation

Spinal shock

Catecholamine depletion

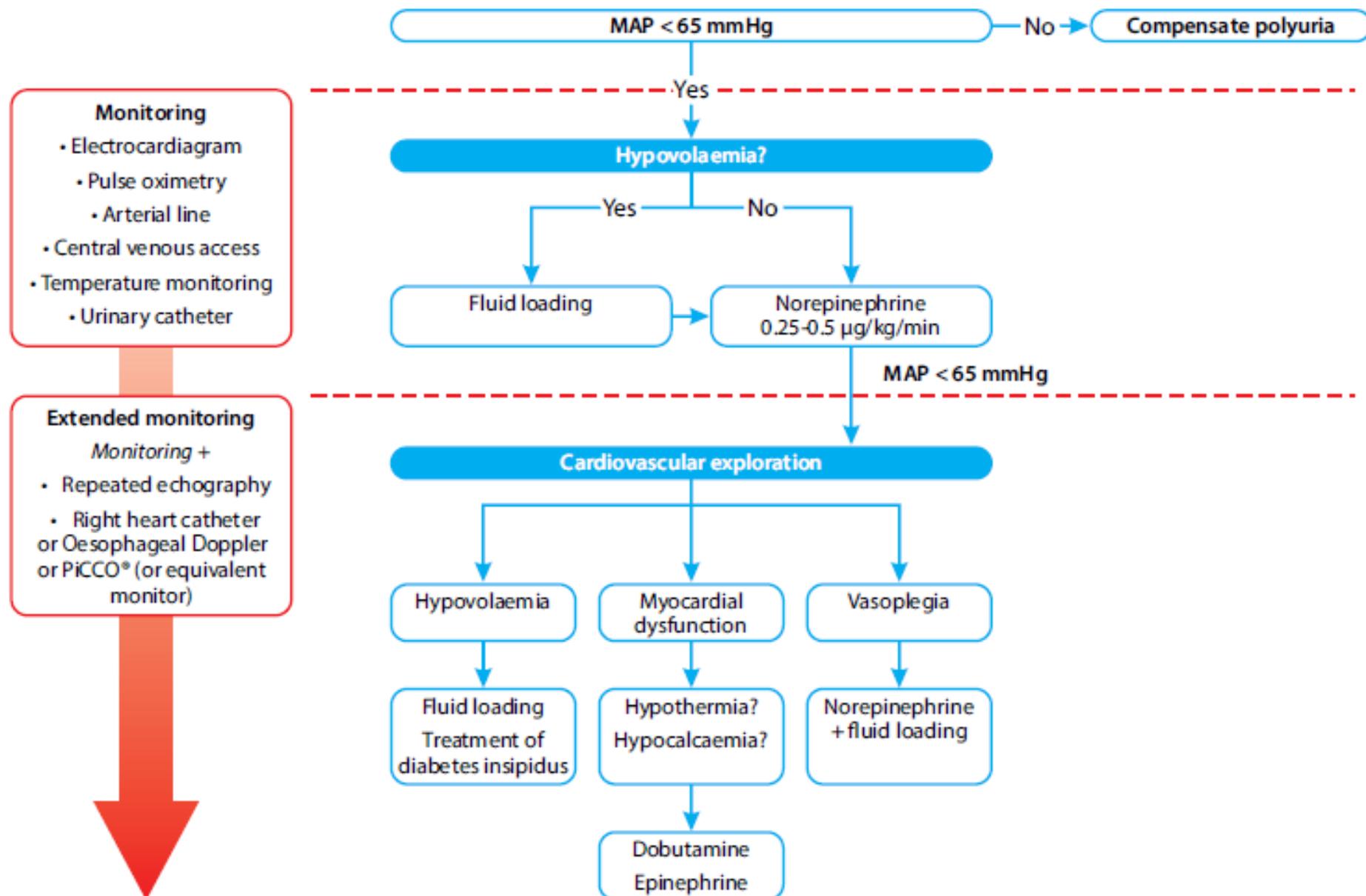
Loss of vasomotor control
and autoregulation

Relative adrenal insufficiency
as a result of trauma or
critical illness

Endocrinopathy of brain
death

Acquired sepsis

Figure 5.2. Haemodynamic objectives and care in the management of the potential donor after brain death



MAP = mean arterial pressure.

Source: Charpentier J, Cariou A. Objectifs et moyens de la prise en charge hémodynamique [33].

Pour la bonne qualité des greffons rénaux et hépatique, le rôle du réanimateur est de

- Maintenir une pression artérielle moyenne comprise entre 65 et 75 mmHg
- **Maintenir une hypernatrémie supérieure à 150 mmol/l (à visée osmotique)**
- Effectuer le remplissage vasculaire sans utilisation de colloïdes
- Perfuser de la noradrénaline en cas d'hypotension persistante

Table 5.1. Basic monitoring parameters and target range in adults

Basic parameters	Target range (adults)	Suggested frequency
Central body temperature	35 °C to 38 °C *	Continuously
Invasive mean arterial pressure (MAP)	60-110 mmHg	Continuously
Heart rate **	70-100/min **	Continuously
Urine output	> 0.5 to 1 mL/kg/h	Hourly
Central venous pressure	4-12 mmHg (4-8 mmHg in potential lung donors)	Continuously
Peripheral arterial oxygen saturation (SpO ₂)	> 95 %	Continuously
Arterial blood gas, pH	7.3-7.5	Every 2 to 4 hours or as needed
Na	135-145 mmol/L	Every 2 to 4 hours or as needed
K	3.5-5 mmol/L	Every 2 to 4 hours or as needed
Blood glucose	< 150 mg/dL (8.3 mmol/L)	Every 2 to 4 hours or as needed
Plasma biochemistry, urine sediment, C-reactive protein		Every 12 hours or as needed
Calcium level	Normal range	Every 2 to 4 hours or as needed
Haemoglobin/haematocrit	≥ 7-9 g/dL (≥ 4.4-5.6 mmol/L) / ≥ 20-30 % (≥ 0.2-0.3)	Every 12 hours or as needed
Platelets	> 50 G/L	Every 12 hours or as needed
Prothrombin time/partial thromboplastin time	within acceptable range to avoiding bleeding †	Every 12 hours or as needed

Notes:

* Mild hypothermia (34 to 35°C) may be considered to reduce the rate of delayed graft function in kidney recipients of organ donors after declaration of death according to neurologic criteria [12].

** Due to failure of the vagus node, sinus tachycardia will be observed; if there are no actual or expected cardiac complications, heart rates up to 120/min can be accepted, especially when inotropes or catecholamines are applied.

† Reference range depends on methods of measurement as well as type of documentation of coagulation parameters; this varies between countries and therefore must be checked locally with the target documented.

Afin de préparer le bon déroulement de l'acte chirurgical de prélèvement des organes, il faut

- Transfuser le donneur si l'hémoglobine est supérieure à 9 g/dl
- Stabiliser l'hémodynamique comme chez tout malade de réanimation
- Collaborer avec l'infirmière de coordination pour l'organisation pratique du bloc
- Administrer un curare avant l'incision chirurgicale
- Administrer un morphinique

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Merci

Didier DOREZ