NICE National Institute for Health and Care Excellence

NICE information for the public

VA ECMO for extracorporeal cardiopulmonary resuscitation (ECPR) in adults with refractory cardiac arrest

Information for the public
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For refractory cardiac arrest with a shockable heart rhythm or reversible causes

This procedure can be used in adults to manage refractory cardiac arrest that happens in or out of hospital if the heart has a shockable rhythm or the cardiac arrest has reversible causes. It can be used because evidence suggests it can improve survival for these people.

For refractory cardiac arrest with a non-shockable heart rhythm or irreversible causes

This procedure can only be done as part of a research study in adults with refractory cardiac arrest if the heart has a non-shockable rhythm or the cardiac arrest has irreversible causes. This is because there is not enough evidence to be sure how well it works or how safe it is for these people.

Your healthcare professional should talk to you, or your family or carers, about the research.

About this procedure

Cardiac arrest is when normal blood circulation suddenly stops because the heart does not beat properly. Cardiac arrest can lead to loss of consciousness, respiratory failure and death. Refractory cardiac arrest is when conventional CPR (cardiopulmonary resuscitation) does not work.

Venoarterial extracorporeal membrane oxygenation (VA ECMO) is when blood is taken out of the body and put through an artificial pump and lung outside of the body (extracorporeal). The ECMO machine adds oxygen to the blood (oxygenation), removes carbon dioxide and pumps the blood around the body. Tubes take the blood out of a large vein and return it into a large artery (venoarterial). This is done over days or weeks.

Extracorporeal cardiopulmonary resuscitation (ECPR) is a type of CPR that uses an ECMO machine when conventional CPR does not work. The aim is to restore circulation and blood gas exchange, and to allow time for other treatments.

Is this procedure right for me?

You should be included in making decisions about your care, where possible. See our webpage on shared decision making.

Your healthcare professionals should explain the risks and benefits of this procedure and how it is done. They should discuss your options and listen carefully to your views and concerns or those of your family or carers. They should offer you more information about the procedure.

Where possible, you will be asked to decide whether you agree (consent) to have the procedure. In an emergency, healthcare professionals may give treatment immediately, without obtaining your informed consent, when it is in your best interests. Find out more about giving consent to treatment on the NHS website.

Some questions to think about

- What are the possible benefits? How likely am I to get them?
- What are the risks or side effects? How likely are they?
- What happens if it does not work or something goes wrong?
- Are other treatments available?

Information and support

The NHS webpage on symptoms of heart attack may be a good place to find out more about cardiac arrest.

The NHS website has information about NHS hospital services and referrals for specialist care.

- NICE's information on interventional procedures guidance explains what an interventional procedure is and how we assess it.
- NICE's information on recommendations explains the types of recommendation we make.

Pumping Marvellous (01772 796542) can give you advice and support.

You can also get support from your local Healthwatch.

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