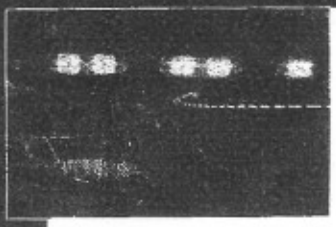


Let It Flow

ResQPOD Circulatory Enhancer enables more effective CPR

By Keith Wesley, MD, FACEP

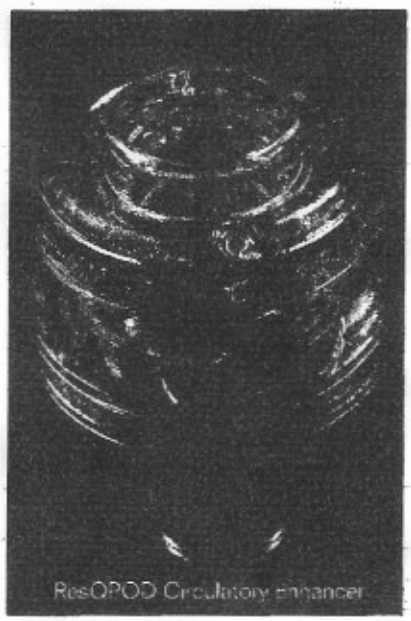
You've responded to a cardiac arrest. Your partner has started CPR, and you check for a pulse during compressions and feel a strong one with each downstroke of your partner's efforts. But does this mean that blood is actually being circulated?

Studies have shown that the presence of a pulse during CPR may not accurately reflect the movement of blood, but may instead indicate that a pressure wave is being transmitted to the pulse site. For CPR to be effective, two things must happen. First, blood must be ejected from the ventricles out the aorta and into the coronary arteries, as well as to the lungs for oxygenation.

Second, and just as important, venous blood must return to the heart during the relaxation phase of each chest compression. If insufficient blood is returned to the heart, the amount ejected during compression is seriously compromised. The physiology of venous blood return to the heart during cardiac arrest relies on the difference between the intra-abdominal and intrathoracic pressures. If the pressure in the chest cavity exceeds that of the abdomen, blood won't flow into the right atrium and ventricle.

Two shortcomings of conventional CPR result in elevated intrathoracic pressure. The first is that we don't allow the chest wall to completely recoil (usually caused by rescuer fatigue from resting their weight on the chest) and the other is that we fill the lungs with air from the bag-valve mask (BVM) and endotracheal (ET) tube during ventilations.

Studies have shown that if a patient's airway is occluded during the recoil phase of CPR with an inspiratory impedance threshold device (IITD), the intrathoracic pressure is reduced below that of the abdomen, thus promoting venous blood return to the heart.



ResQPOD Circulatory Enhancer

Enter the ResQPOD, a single-patient-use device that is placed on a mask or an ET tube and then attached to a ventilation bag. When the chest recoils, a small valve in the device closes and prevents resuscitation gases from passively flowing into the lungs. However, when you compress the bag, the outside air pressure overrides the valve, and air moves into the chest normally. Studies using the ResQPOD have shown that the mean arterial pressure generated during CPR is significantly increased, resulting in:

- increased blood flow to the heart and brain during CPR; and
- increased survival rates and improved neurologic outcome of cardiac arrest victims.

The ResQPOD has undergone extensive study in both animal and human subjects. The improvement in cardiac arrest survival has been most notable in the return of spontaneous circulation in patients in PEA and asystole, two conditions with historically poor outcomes. Not only has survival been significantly improved, but neurological outcome has as well.

The ResQPOD is effective with standard CPR, as well as other forms of CPR, such as active compression-decompression CPR. It works in conjunction with all standard resuscitation equipment and techniques, including mouth-to-mask, BVM, ET intubation and non-visualized airway devices. The ResQPOD is simple to use and recommended by the AHA for the treatment of cardiac arrest.

To use the ResQPOD, remove it from its package, and attach it directly to either a rescue mask, an ET tube or any non-visualized airway. When using the device with a rescue mask, it's vital that a tight seal be continuously maintained. Any leak around the mask will hinder the effect of the ResQPOD.

The ventilation device is then attached to the ResQPOD. End-tidal CO_2 detectors may be placed in-line between the ResQPOD and the ventilation bag. The ResQPOD must be removed from the ET tube to administer medication down the tube.

Another unique feature of the ResQPOD is the integrated LED timing-assist lights that flash at the AHA guideline rate of 12 times per minute. A small switch is pressed to activate the lights. The timing-assist lights help prevent hyperventilation of the

arrest victim, which has been shown to reduce venous blood return to the heart. Every time the light flashes, the rescuer should ventilate the patient.

To learn more, call 877/737-7763 or visit www.resqsystems.com, where you'll find a comprehensive presentation of the technology, device specifications, published literature and an extensive review of frequently asked questions regarding the use of the ResQPOD.

Keith Wesley, MD, FACEP, is an emergency medicine physician practicing in Wisconsin and Minnesota. He currently serves on the EMS Advisory Board for the EMS Section for the state of Wisconsin and is the medical director for Chippewa Fire District in Chippewa Falls, Wis.

Resources

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