

A CPR success story

By Brent Hobbs, RN, BSN, CNCC(C)

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I have performed cardiopulmonary resuscitation (CPR) countless times during my career as a registered nurse and paramedic. Rarely have I witnessed a positive outcome from CPR efforts. That changed on April 19, 2009. On that day, I was competing in a masters swim meet. In the heat before my race, a 69-year-old male was competing in the 200-metre freestyle. At the 125-metre mark, he stopped swimming. He appeared to be relaxing on his back, face up. Everyone who was watching realized this was no rest break! Luckily, there was a swim official in close proximity who immediately recognized the seriousness of the situation and jumped into the pool to save the athlete. Fortunately, the patient was in the shallow end, so the official was able to extricate the swimmer face-up to prevent aspiration. I and a respiratory therapist (RT) responded a few seconds later. A quick breathing and pulse check revealed the patient was in cardiac arrest. Chest compressions were started immediately and my RT partner assessed the patency of the patient's airway soon after that. While performing the new CPR technique (American Heart Association, 2005), the lifeguards summoned an ambulance, hooked up portable oxygen to the pocket mask, and retrieved an Automatic External Defibrillator (AED). Within one minute of CPR we had an AED attached. Analysis revealed "no shock" advised. We carried on with compressions and ventilations at a

ratio of 30:2 for another minute. A short while later, my RT colleague noted the patient was making "agonal" respirations, but we carried on with compressions without pausing for a pulse check. A minute later, we were about to re-analyze the patient's cardiac rhythm with the AED when he started coughing. At that point, a pulse check confirmed the return of spontaneous circulation. Soon thereafter, the patient's colour "pinked" up, his radial pulse was 110 and regular and his respirations were 28 and effective. A minute later, our swimmer woke up and motioned that he wanted to get back into the pool to finish his race! We didn't let him. By that time, the ambulance service was in attendance (within five minutes of the call). Our patient was transferred to the local coronary care unit where tests confirmed no damage to his myocardium, nor did he experience neurological sequelae. This positive outcome was a direct result of performing effective CPR.

The new CPR technique recommended by the American Heart Association (2005) emphasizes that CPR performed immediately after collapse can double or triple the victim's chance of survival. To be effective, CPR must restore adequate coronary and cerebral blood flow. Interruptions in chest compressions lower coronary perfusion pressure and decrease rates of survival from cardiac arrest (Kern, 2002). In the scenario described above, my RT colleague and I placed emphasis on compressions over ventilations. For example, we started compressions **before** ventilations. We also did not stop compressions while AED pads were being applied, nor did we stop compressions when the patient exhibited "agonal" respirations.

We attribute our patient's survival from cardiac arrest to several factors: a) quick recognition of an emergency; b) extrication from the water without risk of aspiration; and c) timely commencement of CPR (within 15 seconds of the event); and emphasis on effective chest compressions [depth of one-third to one-half the depth of the chest and a rate of 100 compressions/minute (American Heart Association, 2005)]. As a result of our efforts, we look forward to swimming with our patient in the near future. ☑

References

- American Heart Association. (2005). Part 3: Overview of CPR. *Circulation*, **112**, IV-12–IV-18.
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