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The underutilization of therapeutic hypothermia after cardiac arrest

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Approximately 500,000 people every year experience a cardiac arrest, of whom less than 10% are resuscitated. Survivors often encounter neurologic sequelae ranging from moderate cognitive dysfunction to brain death. The only treatment known to protect the brain from injury after a cardiac arrest is therapeutic hypothermia. Mild hypothermia may decrease the area of injury, promote epicardial reflow, decrease myocardial metabolic demand, and preserve intracellular high-energy phosphate stores. A 2011 meta-analysis of randomized controlled trials found that therapeutic hypothermia with conventional cooling methods improves both survival and neurologic outcomes at hospital discharge for patients who experienced cardiac arrest. While the process of therapeutic hypothermia is cost efficient and relatively easy to provide, only about 13% of hospitals offer this treatment. The Hypothermia after Cardiac Arrest Study Group showed that, when applied to unconscious out-of-hospital cardiac arrest patients with return of spontaneous circulation (n=274), mild hypothermia (cooling to 32-34°C) provided significant improvement in functional recovery at hospital discharge (55% vs 39%; number needed to treat (NNT)=6) and lower 6-month mortality rate when compared with patients who were not cooled (41% vs 55%) (NNT=7). Despite the inclusion of hypothermia in American Heart Association Guidelines for CPR and Emergency Cardiovascular Care in 2005, mild therapeutic hypothermia has lacked sufficient weight and is largely misunderstood and inconsistently applied. Barriers such as lack of equipment, education, and protocols have been attributed to its underutilization. Therefore, hospitals need to be proactively involved and create protocols to defend its underutilization to protect vital organs.

Biography

Shawn Blouin is a 2nd year Doctor of Nursing Practice student at the University of South Florida in the Acute Care Nurse Practitioner track. He serves as the President of the Society of Acute Care Nurse Practitioner Students, teaching assistant for pathophysiology, research assistant for HeartMapp, and critical care nurse.

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