

Chill Them and They will Respond!

Cindy L. Martin-Salinas, RN, BSN, CCRN, CSC
Kadlec Medical Center

Problem:

Ischemic neurological injury following a cardiac arrest profoundly impacts our healthcare system. We have been successful in reviving and supporting the heart of our patients but have been unsuccessful in meeting the demands of the brain following an arrest. As a result, many of our arrest patients are discharged to long-term care facilities in a persistent vegetative state. Only 17.7% of ventricular-dysrhythmia cardiac arrest victims survive to hospital discharge, according to a study completed in 2004.

Evidence:

In December 2005, the American Heart Association published recommendations for using mild hypothermia for cardiac arrest victims. These recommendations apply to the out-of-hospital cardiac arrest victim with an initial rhythm of ventricular tachycardia or fibrillation, that is unconscious after return of spontaneous circulation. Our multidisciplinary Critical Care Core Group, reviewed these recommendations and multiple other evidence-based sources. Using all the evidence gathered, this group developed a hypothermia protocol.

Practice Change:

Our unit adopted a cardiac arrest hypothermia checklist. This checklist guided the critical care nurse, respiratory therapist and intensivist with a consistent approach to administering this hypothermic therapy. This process involved reviewing inclusive vs. exclusive criteria, establishing a baseline neurological assessment, ensuring adequate airway stability, fluid resuscitation, sedation, application of cooling measures and shivering control.

Evaluation:

All patients receiving hypothermia therapy are reviewed for their discharge performance status, the rhythm at the time of arrest, length of time to return of spontaneous circulation and time from arrest event to when they were cooled to 33°C.

Results:

Since June 2006, we have initiated hypothermia therapy on 21 patients. 35% have had good outcomes, where they are conscious, alert and able to return to work and lead a normal life. 23% had moderate outcomes, where they are conscious with sufficient cerebral function for part-time work in sheltered environment or independent activities of daily life. 42% had poor outcomes with severe cerebral disability, not conscious or death.

Recommendations:

The results warrant continued application of hypothermia therapy for our cardiac arrest patients, continued review of patient outcomes and review of evidence-based nursing practice interventions that may improve the delivery of care of these patients.

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