Mild Therapeutic Hypothermia

In patients who have a return of spontaneous circulation (ROSC) following a cardiac arrest and who present to the hospital in coma, the incidence of poor neurological outcome is high. The clinical use of mild hypothermia (33^{O}-34^{O} C.) is the only treatment that has been proven effective in randomized clinical trials for improving neurological outcome after cardiac arrest.

The purpose of a Mild Therapeutic Hypothermia protocol is to establish the multidisciplinary approach for instituting immediate mild-moderate hypothermia (core temperature 33-34 degrees Celsius) in patients presenting in coma following cardiac arrest (out-of-hospital and in-hospital). This protocol defines the inclusion criteria for hypothermia in post-cardiac arrest patients, describes the methodology to induce hypothermia for up to 24 hours, and identifies specific steps used in the re-warming phase to bring the patients safely back to normothermia.

In April 2012, Clark Memorial Hospital launched a Mild Therapeutic Hypothermia protocol. This is to be used on any out of hospital cardiac arrest with ventricular fibrillaton or ventricular tachycardia, witnessed, and return of spontaneous circulation within 60 minutes. The goal with therapeutic hypothermia is to cool the patient down immediately using iced normal saline infusion and the Arctic Sun cooling system. The goal temperature of 33 ^{O}C should be reached within two hours. Once goal temperature is reached, the patient will remain at that temperature for 24 hours. Re-warming will begin at hour 24 at 0.125^{O} C per hour until the patient reaches 37^{O} C.

Since going live in April of 2012, Clark Memorial Hospital has had at least 10 hypothermia patients. Our success rate is at or above 50%. The very first hypothermia patient we had walked out of our hospital of her own free will. She later came back to visit our Critical Care Unit and thank the team members for saving her life. Hypothermia is a very intense process. It is set up with a 1:1 nurse:patient ratio. However, the first four hours are often a 3:1 ratio. The nurse must continuously monitor the blood pressure, oxygen saturation, EKG, central venous pressure, Bispectral Index, Foley catheter temperature and esophageal temperature, electrolytes, blood glucose, intravenous drips (including paralytics, sedatives and vasopressors) and monitor for shivering.