Saturday news tips: Resuscitation Science Symposium

EurekAlert

Abstract 106 Care for cardiac arrest patients treated with hypothermia may be withdrawn too soon

Cardiac arrest patients treated with hypothermia may achieve neurological awakening that's not apparent for a week several days after physicians routinely make recommendations about whether to withdraw care, researchers said.

For more than 25 years, the prognosis for recovery from cardiac arrest and the decision to withdraw care has been based on a neurological exam at 72 hours. So the finding may have profound implications on when withdrawal-of-care decisions will be made for these patients.

Researchers evaluated 47 patients who survived non-traumatic out-of-hospital cardiac arrest and were admitted to an academic medical center. Fifteen patients received therapeutic hypothermia (cooling the body to 33 degrees Celsius, 91.4 degrees Fahrenheit). Seven of them (46.6 percent) survived to discharge. Of the 32 patients who received conventional care (no hypothermia), 13 (40.6 percent) survived to discharge.

Brain activity level was assessed daily in all patients:

- Within three days, 38.5 percent of patients receiving conventional care were alert after resuscitation and considered to have mild deficits.
- At day three, no hypothermia patients were alert and conscious.
- At day seven, 33 percent of hypothermia patients had regained alertness and were considered to have mild deficits.
- At discharge, 83 percent of hypothermia patients were alert and considered to have only mild deficits.

"These data suggest that contrary to the established paradigm, patients with hypothermia achieve substantial neurological awakening that may start at day three but is not apparent until day seven and possibly longer," researchers said.

Their finding should be validated in a study with a higher number of patients, researchers said.

Shaker M. Eid, M.D., assistant professor of medicine, Johns Hopkins University School of Medicine, Baltimore, Md.; (410) 900-0495; seid1@jhmi.edu [1] or shakeslb@yahoo.com [2].

(Note: Actual presentation time is 5:15 p.m. CT, Saturday, Nov. 13, 2010.)

Abstract 47 Withdrawal of early care may prematurely end life of cardiac arrest patients

Arbitrary withdrawal of life support 72 hours after re-warming "may prematurely terminate life in at least 10 percent of all potentially neurologically intact survivors" of cardiac arrest treated with therapeutic hypothermia, according to a retrospective study.

Researchers examined the time interval from when patients had been fully re-warmed to 37 degrees Celsius (98.6 degrees Fahrenheit) to when they showed definitive signs of awakening — including being alert and oriented to a person, place or time.

Comatose patients were generally treated after therapeutic hypothermia for at least 48 hours before any decision to withdraw supportive care was made.

The study included 66 patients (average age 59). The time from 9-1-1 call to advanced life support was 9.1 minutes. Six patients who showed signs of awakening more than 72 hours later had good neurological function within 30 days of cardiac arrest.

Keith Lurie, M.D., professor of medicine, University of Minnesota, Minneapolis, Minn.; (612) 986-3917; klurie@advancedcirculatory.com [3].

(Note: Actual presentation time is 5:15 p.m. CT, Saturday, Nov. 13, 2010.)

Abstract 232 Hospitals withdraw care of hypothermia-treated cardiac arrest patients early

Withdrawing care before 72 hours is common even when specific protocols to prevent early withdrawal are in place, according to a multi-center study.

Assessing withdrawal of care for post-cardiac arrest therapeutic hypothermia patients, researchers examined data from a prospective study of 1,292 patients with out-of-hospital cardiac arrest treated in one of 26 state-recognized cardiac receiving centers. All cardiac receiving centers have protocols with a moratorium on withdrawal of care at least 72 hours after therapeutic hypothermia.

Fifty-four percent of patients were excluded because they died in the emergency department. Of the 177 patients admitted to an ICU and cooled, care was withdrawn on 59 (33.3 percent) within 24 hours, 53 (29.9 percent) between 25-72 hours and 45 (25.4 percent) after 72 hours.

Withdrawal of care is highly variable and more emphasis on continuing care in post-therapeutic hypothermia patients is warranted, researchers said.

Kyle McCarty, M.D., emergency medicine resident, Maricopa Medical Center, Phoenix, Ariz.; (602) 344-5011; Kyle.Mccarty@mihs.org [4].

(Note: Actual presentation time is 8 a.m. CT, Sunday, Nov. 14, 2010.)

Abstract 1 Trial finds weak link between epinephrine use, survival-to-hospital discharge in cardiac arrest cases

Administering epinephrine (adrenaline) in cardiac arrest helped more patients achieve return of spontaneous circulation (ROSC) — but didn't necessarily lead to survival-to-hospital discharge, researchers said.

In a double-blind randomized placebo-controlled study, researchers randomized out-of-hospital cardiac arrest patients to receive either saline or epinephrine. They then analyzed survival to discharge and a return of spontaneous circulation.

Of 535 patients in the study, 262 (48.9 percent) received saline and 273 (51 percent) received epinephrine. The percentage who received bystander CPR was similar in both groups. ROSC was achieved in 83 patients (30.4 percent) receiving epinephrine and 29 patients (11.1 percent) receiving the placebo. Survival to discharge occurred in 11 patients receiving epinephrine (4.1 percent) and five placebo patients (1.9 percent).

The study's results didn't rule out a clinically meaningful benefit of epinephrine for survival to hospital discharge; so researchers said further investigation is warranted.

Ian Jacobs, Ph.D., R.N., professor of resuscitation and pre-hospital care, University of Western Australia, Nedlands, Australia; (011) 61-4-1891-6261; ian.jacobs@uwa.edu.au [5].

(Note: Actual presentation time is 8:30 a.m. CT, Saturday, Nov. 13, 2010.)

Abstract 51 AHA guidelines, systems-based approach boost survival rates for out-of-hospital cardiac arrest

Treating people who suffered cardiac arrest outside a hospital with a systems-based approach, compared to historical controls, quadrupled survival rates in a mid-size community, researchers said.

Beginning in 2006, the EMS system in Colonie, N.Y. (population 80,000) began phasing in recommended therapies from the 2005 American Heart Association's

CPR guidelines including:

- 2006 New CPR guidelines and expanded training using the AHA's CPR Anytime
- 2007 Use of impedance threshold device and more rapid deployment of mechanical CPR devices
- 2008 Improvements in reducing emergency response times, performing two minutes of CPR prior to defibrillation, and delaying advanced airway placement and IV access in favor of a period of high quality CPR
- 2009 Hospital-based therapeutic hypothermia for comatose resuscitated arrest patients

Since 2005, about 200 people annually have been trained in CPR; dispatch improvements reduced response times by one minute; and three level one cardiac arrest centers were opened. Survival following out-of-hospital cardiac arrest improved from 4 percent in 2005 (3/75 patients) to 22 percent (14/64 patients) in 2009. The 14 survivors from 2009 were neurologically intact, researchers said.

Michael Dailey, M.D., FACEP, associate professor of emergency medicine, Albany Medical College and medical director, Town of Colonie EMS, Albany, N.Y.; (518) 488-8824; mwd101@gmail.com [6].

(Note: Actual presentation time is 5:15 p.m. CT, Saturday, Nov. 13, 2010.)

Author disclosures are available on the abstracts.

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