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A Novel Method of Intravascular Temperature Modulation to Treat Severe Hypothermia

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An 81-year-old man with a history of hypertension, urosepsis, congestive heart failure, and chronic renal insufficiency, was noted by his family to be short of breath and unresponsive.

Emergency medical service was called, and the patient was found to have a blood pressure of 70/palpitation, heart rate of 49 beats/min, [and] respiratory rate 14 breaths/min. On admission to the emergency department, the patient was found to have a rectal temperature of 27.9°C, pulse 52, blood pressure 104/69 mm Hg, and an oxygen saturation of 100%. An ICY® catheter was placed via the femoral vein and intravascular warming was initiated with the goal temperature set at 37.5°C. The patient did not experience cardiovascular after-drop, and normal sinus rhythm resumed 90 minutes after rewarming was initiated.

Rewarming a patient with hypothermia is not a casual [endeavor], as too rapid rewarming can precipitate a condition known as after-drop. After-drop is defined as the precipitous reduction in core temperature resulting from redistribution of body heat to improperly warmed peripheral tissues, and the rapid shunt of cold blood from the periphery to the core as the direct result of vasodilatation. After-drop can cause a further drop in core temperature, even after a patient is removed from the cold. Shock and metabolic derangements can also be precipitated by too rapid rewarming or by warming the periphery before core warming.

INTRAVASCULAR REWARMING

Intravascular rewarming, via a closed-loop indwelling catheter, is a novel approach to rewarming that was successfully used at [Barnes-Jewish Medical Centre in St. Louis, Missouri]. The Icy catheter used to rewarm the severely hypothermic patient described in the preceding case study was originally developed to provide core temperature cooling in neurosurgery and post-cardiac arrest patients.

Emerg Med J 2006;23:e56 (<http://www.emjonline.com/cgi/content/full/23/10/e56>). Doi: 10.1136/emj.2006.035360

**If you would like more information on the full case study, email info@alsius.com or call Alsius for a copy of the full article*

“Active core rewarming techniques are the primary therapeutic modality in hypothermia victims...”

“The most effective and safest treatment for all levels of hypothermia is the addition of heat to the body core, rather than via the periphery”

- Guidelines from Emergency Cardiac Care Committee and AHA, JAMA, October 28, 1992

Three posters were presented at the European Society of Intensive Care Medicine (ESICM) Meeting in Barcelona, Spain

- Poster #1: Efficacy and Tolerance of Hypothermia After Cardiac Arrest Using an Endovascular Cooling System
Dupuytren Teaching Hospital, Limoges, France
- Poster #2: Using an Intravascular Cooling Device to Reverse Refractory Burn-associated Hypothermia
ICU, General Hospital of Athens G Gennimatas, Athens, Greece
- Poster #3: Efficiency of an Intravascular Cooling Method and Conventional Cooling Technique in Patients
Georg-August University, Göttingen and University Hospital, Kiel, Germany

**If you would like to receive a copy of the above poster presentation, please contact (877) 2ALSIUS or info@alsisu.com*



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Las Angeles, California

February 16-17, 2007
Gathering of Eagles 2007 Conference
Irving, Texas

January 27-30, 2007
Society of Thoracic Surgeons (STS)/AATS Tech Conference
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February 17-20, 2007
Society of Critical Care Medicine (SCCM) 36th Critical Care Congress
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