

Neurologic function, temperature management in patients after cardiac arrest

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Quality of life was good and cognitive function was similar in patients with cardiac arrest who received targeted body-temperature management as a neuroprotective measure in intensive care units in Europe and Australia, according to an article published online by *JAMA Neurology*.

Brain injury is the primary cause of death for [patients](#) treated in intensive care units after suffering [cardiac arrest](#) (CA) outside of a hospital. Targeted temperature management (TTM) has been implemented as a neuroprotective treatment for comatose CA survivors because of reports of improved survival, according to background information in the study.

Niklas Nielsen, M.D., Ph.D., of Lund University and Helsingborg Hospital, Sweden, and coauthors compared the effect of two targeted temperature regimens on long-term cognitive function and quality of life after CA. The clinical trial was performed from November 2010 through part of January 2013 and it included 939 adults, who were unconscious with CA, in its final analysis.

Patients were assigned to either temperature management at 33 degrees Celsius (91.4 degrees Fahrenheit) or 36 degrees Celsius (96.8 degrees Fahrenheit). The intervention lasted 36 hours and patients were cooled down or warm up to the assigned temperature, according to the study. Patient cognitive function and quality of life were measured six months after the CA.

At follow-up, 245 patients were alive in the 33-degree-Celsius group and 246 were alive in the 36-degree-Celsius group. The study found scores of cognitive function were similar for both temperature groups. There was no difference in the percentage of patients with an increased need for help in activities of daily living, with 46 (18.8 percent) in the 33-degree-Celsius group and 43 (17.5 percent) in the 36-degree-Celsius group. Also, 66.5 percent of patients in the 33-degree-Celsius group and 61.8 percent in the 36-degree-Celsius group reported they thought they had made a complete mental recovery.

"Quality of life was good and similar in patients with CA receiving TTM at 33 degrees Celsius or 36 degrees Celsius. Cognitive function was similar in both intervention groups, but many patients and observers reported impairment not detected previously by standard outcome scales," the study concludes.

In a related editorial, Venkatesh Aiyagari, M.B.B.S., D.M., of the University of Texas Southwestern Medical Center, Dallas, and Michael N. Diringer, M.D., of the Washington University School of Medicine, St. Louis, write: "For neurologists who are often called on to render an opinion on the prognosis of unconscious patients after CA, an important take-home message from this study is that although cognitive changes are common, the overall long-term outcome of patients with a CA who survive to hospital discharge is quite good. Most of these patients are discharged home and report no problem with self-care and a significant number are gainfully employed. Similar findings have also been reported in a study of 927 CA survivors in Victoria, Australia, and reinforce the view that patients who survive a CA and are unconscious should be managed with intensive support measures, including TTM, and premature prognostication should be avoided."

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