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## New treatment reduces cerebral damage in out-ofhospital cardiac arrest patients

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Among comatose survivors of out-of-hospital cardiac arrest, treatment with inhaled xenon gas combined with hypothermia, compared with hypothermia alone, results in less white matter damage. This was the primary outcome in a randomized clinical trial that was funded by the Academy of Finland and the Hospital District of Southwest Finland. In the secondary outcome, for which the study was not powered, there was no significant difference in neurological outcomes or death at six months. The study appears in the March 15 issue of JAMA, an international peer-reviewed general medical journal.

Survivors of out-of-hospital cardiac arrest have a poor prognosis with high rates of death usually from neurological problems. Animal studies have established the neuroprotective properties of the inhaled noble gas xenon. Neuroprotection associated with xenon has been especially evident when combined with hypothermia. Thus far, these neuroprotective properties have not been reported in human studies.

Timo Laitio, MD, PhD, of the University of Turku, Finland, and colleagues randomly assigned 110 successfully resuscitated, but still comatose patients who had experienced an out-of-hospital cardiac arrest to receive either inhaled xenon combined with hypothermia for 24 hours (n = 55) or hypothermia treatment alone (n = 55; control group). The trial was conducted at two intensive care units in Finland.

There were magnetic resonance imaging data from 97 patients a median of 53 hours after cardiac arrest. The researchers found that patients in the xenon group had less white matter damage compared to the control group.

These preliminary findings require further evaluation in an adequately powered clinical trial designed to assess clinical outcomes associated with inhaled xenon among survivors of out-of-hospital cardiac arrest, the authors write.

Source: Suomen Akatemia (Academy of Finland)

