

Treatment lessens cerebral damage following out-of-hospital cardiac arrest

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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, resulted in less white matter damage; however, there was no significant difference in neurological outcomes or death at 6 months, according to a study appearing in the March 15 issue of *JAMA*.

Survivors of out-of-hospital cardiac arrest have a poor prognosis with high rates of death and the likelihood of having severe 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](#) (91.4°F to 95°F). Thus far, these neuroprotective properties have not been reported in human studies.

Timo Laitio, M.D., Ph.D., of the University of Turku, Finland, and colleagues randomly assigned 110 comatose patients who had experienced out-of-hospital cardiac arrest to receive either inhaled xenon combined with hypothermia (91.4°F) 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. At six months, 75 patients (68 percent) were alive. There were no significant differences between the groups on measures of neurological

and cognitive outcomes, or death at six months.

"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.

More information: *JAMA*, [DOI: 10.1001/jama.2016.1933](https://doi.org/10.1001/jama.2016.1933)

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