

Common IV fluid associated with reduced likelihood of full recovery in patients with cardiac arrest

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Although an intravenous fluid that paramedics in Japan often give to patients in cardiac arrest before they reach hospital may help restore circulation, it may also be linked to reduced survival with minimal neurological or physical damage one month later, according to a study from Japan published in this week's *PLOS Medicine*.

In Japan, [intravenous fluid](#) loading with lactated Ringer's solution (a mixture of salts and sodium lactate) is included in resuscitation guidelines for patients who have a [cardiac arrest](#) out of hospital. In order to investigate outcomes associated with this practice, Japanese researchers, led by Akihito Hagihara from the Kyushu University Graduate School of Medicine, analysed national information from 2005 to 2009 on more than a half million patients experiencing a cardiac arrest out-of-hospital and then examined their subsequent health outcomes one month later.

The authors found that when other factors such as age, sex, and time taken for help to arrive were taken into account, the pre-hospital use of lactated Ringer's solution was linked to a slightly increased chance (1.2) of return of spontaneous circulation before arrival at hospital but with a decreased chance (0.7) of survival with minimal neurological or physical impairment one month later. However, among all patients, the pre-hospital use of lactated Ringer's solution had no effect on overall survival at one month.

Although these findings may have important clinical implications, the authors make clear that these results will need to be confirmed in other studies before changing clinical guidelines. Their study did not have information on the treatment that patients received once they reached hospital, which may have influenced the results.

The authors say: "We found that prehospital IV loading with lactated Ringer's solution was independently associated with a decreased likelihood of 1-month survival with minimal neurological or physical impairment."

They continue: "Prehospital IV loading with lactated Ringer's solution was associated with an increased likelihood of return of spontaneous circulation before hospital arrival, while 1-month survival varied depending on the analysis."

The authors add: "Our findings should be verified by studies that include data on in-hospital resuscitation."

They conclude: "Future studies will need to determine whether administration of fluids other than lactated Ringer's solution is associated with beneficial outcomes."

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