IV drug treatment for out-of-hospital cardiac arrest may not improve long-term survival

November 24 2009

Patients with an out-of-hospital cardiac arrest who received intravenous (IV) drug administration during treatment, recommended in life support guidelines, had higher rates of short term survival but no statistically significant improvement in survival to hospital discharge or long-term survival, compared to patients who did not receive IV drug administration, according to a study in the November 25 issue of *JAMA*.

"Intravenous access and drug administration are integral parts of cardiopulmonary resuscitation (CPR) guidelines. Millions of patients have received epinephrine during advanced cardiac life support (ACLS) with little or no evidence of improved survival to hospital discharge," the authors write. "Epinephrine was an independent predictor of poor outcome in a large epidemiological study, possibly due to toxicity of the drug or CPR interruptions secondary to establishing an intravenous line and drug administration."

Theresa M. Olasveengen, M.D., of Oslo University Hospital, Norway, and colleagues compared outcomes for patients receiving standard ACLS with and without intravenous drug administration during out-of-hospital cardiac arrest in Oslo, between May 2003 and April 2008. Of 1,183 patients for whom resuscitation was attempted, 851 were included in the study and randomized to either intervention; 418 patients were in the ACLS with intravenous drug administration group and 433 were in the ACLS with no intravenous drug administration group. The primary outcome for the study was survival to hospital discharge, with other outcomes including 1-year survival and quality of CPR (chest

compression rate, pauses, and ventilation rate).

Analysis of the study results indicated that both groups had adequate and similar CPR quality, with few chest compression pauses and with compression and ventilation rates within the guideline recommendations.

"In the intravenous group, 44 of 418 patients (10.5 percent) survived to hospital discharge vs. 40 of 433 (9.2 percent) in the no intravenous group. Survival with favorable neurological outcome was 9.8 percent for the intravenous group and 8.1 percent for the no intravenous group," the authors write. "The cumulative postcardiac arrest survival rate at 7 days was 14.6 percent for patients in the intravenous group vs. 12.8 percent for patients in the no intravenous group, 11.3 percent vs. 8.8 percent, respectively, at 1 month, and 9.8 percent vs. 8.4 percent at 1 year."

The researchers note that after adjustment for ventricular fibrillation, response interval, witnessed arrest, or arrest in a public location, there was no significant difference in survival to hospital discharge for the intravenous group vs. the no intravenous group. "Larger trials examining resuscitation without intravenous access and drug administration, as well as of existing or new drugs, appear to be justified."

More information: *JAMA*. 2009;302[20]:2222-2229.

Source: JAMA and Archives Journals (news : web)