



Title	Clinical Effectiveness and Cost-effectiveness of Prehospital Intravenous Fluids in Trauma Patients
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Aim

To systematically review the evidence on the effectiveness (in terms of mortality and morbidity) of prehospital intravenous (IV) fluid replacement, compared with no IV fluid replacement or delayed fluid replacement, in trauma patients with no head injury who have hemorrhage-induced hypotension due to trauma.

Conclusions and results

Although 4 relevant randomized controlled trials (RCTs) were identified, 3 were poorly designed and/or conducted. One good-quality RCT suggested that IV fluids might be harmful in patients with penetrating injuries. No evidence was found on the relative effectiveness of IV fluids in patients with blunt versus penetrating trauma. No reliable evidence was found from systematic reviews to suggest that a particular type of fluid is more beneficial compared to another type, although there was a trend favoring crystalloids over colloids. The relative costs of using IV fluids versus not using them were found to be similar, and changes in the use of fluids would therefore have no cost consequences for the ambulance service. A more detailed cost-effectiveness analysis would require further information on the relative consequences (mortality, morbidity) of different resuscitation strategies.

Recommendations

The review found no evidence to suggest that prehospital IV fluid resuscitation is beneficial, and some evidence that it may be harmful. This evidence is not conclusive, particularly for blunt trauma. A UK Consensus Statement and, to a lesser extent, the UK Joint Royal Colleges Ambulance Liaison Committee guidelines represent a more cautious approach to fluid management than previously advocated and are therefore consistent with the limited evidence base.

Methods

Search strategies were defined to identify RCTs and previous systematic reviews relating to the use of IV fluids in a prehospital (or other) setting compared to no fluids

or delayed fluids. Inclusion and exclusion criteria were applied to identified studies, and key quality criteria of included studies were checked. Data were extracted independently by two reviewers. Economic evaluations were systematically sought and appraised.

Further research/reviews required

Further research is required on hypotensive (cautious) resuscitation versus delayed or no fluid replacement, particularly in blunt trauma. There is also a need to improve the quality of data collection and analysis of routinely collected ambulance call-out data.