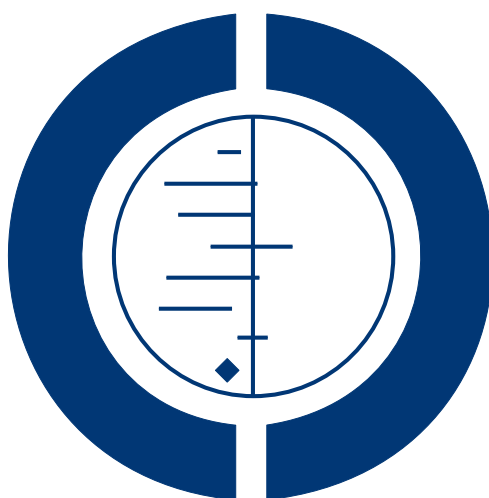


Emergency intubation for acutely ill and injured patients (Review)

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[Intervention Review]

Emergency intubation for acutely ill and injured patients

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ABSTRACT

Background

Emergency intubation has been widely advocated as a life saving procedure in severe acute illness and injury associated with real or potential compromises to the patient's airway and ventilation. However, some initial data have suggested a lack of observed benefit.

Objectives

To determine in acutely ill and injured patients who have real or anticipated problems in maintaining an adequate airway whether emergency endotracheal intubation, as opposed to other airway management techniques, improves the outcome in terms of survival, degree of disability at discharge or length of stay and complications occurring in hospital.

Search methods

We searched the Cochrane Injuries Group Specialised Register (December 2006), Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2006, Issue 4), MEDLINE (1950 to November 2006), EMBASE (1980 to week 50, December 2006), National Research Register (Issue 4, 2006), CINAHL (1980 to December 2006), BIDS (to December 2006) and ICNARC (to December 2006). We also examined reference lists of articles for relevant material and contacted experts in the field. Non-English language publications were searched for and examined.

Selection criteria

All randomised (RCTs) or controlled clinical trials involving the emergency use of endotracheal intubation in the injured or acutely ill patient were examined.

Data collection and analysis

The full texts of 452 studies were reviewed independently by two authors using a standard form. Where the review authors felt a study may be relevant for inclusion in the final review or disagreed, the authors examined the study and a collective decision was made regarding its inclusion or exclusion from the review. The results were not combined in a meta-analysis due to the heterogeneity of patients, practitioners and alternatives to intubation that were used.

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Main results

We identified three eligible RCTs carried out in urban environments. Two trials involved adults with non-traumatic out-of-hospital cardiac arrest. One of these trials found a non-significant survival disadvantage in patients randomised to receive a physician-operated intubation versus a combi-tube (RR 0.44, 95% CI 0.09 to 1.99). The second trial detected a non-significant survival disadvantage in patients randomised to paramedic intubation versus an oesophageal gastric airway (RR 0.86, 95% CI 0.39 to 1.90). The third included study was a trial of children requiring airway intervention in the prehospital environment. The results indicated no difference in survival (OR 0.82, 95% CI 0.61 to 1.11) or neurologic outcome (OR 0.87, 95% CI 0.62 to 1.22) between paramedic intubation versus bag-valve-mask ventilation and later hospital intubation by emergency physicians; however, only 42% of the children randomised to paramedic endotracheal intubation actually received it.

Authors' conclusions

The efficacy of emergency intubation as currently practised has not been rigorously studied. The skill level of the operator may be key in determining efficacy.

In non-traumatic cardiac arrest, it is unlikely that intubation carries the same life saving benefit as early defibrillation and bystander cardiopulmonary resuscitation (CPR).

In trauma and paediatric patients, the current evidence base provides no imperative to extend the practice of prehospital intubation in urban systems.

It would be ethical and pertinent to initiate a large, high quality randomised trial comparing the efficacy of competently practised emergency intubation with basic bag-valve-mask manoeuvres (BVM) in urban adult out-of-hospital non-traumatic cardiac arrest.

PLAIN LANGUAGE SUMMARY

Emergency endotracheal intubation (placing a tube through the mouth and throat into the lungs) may reduce deaths from acute illness and injury, but more research is necessary.

Acute illness and injury are the most common causes of death and disability worldwide in people aged under 50 years. The highest priority in an emergency is to enable a patient to breathe by securing their airway (passage from the nose and mouth into the lungs). Endotracheal intubation is one of various ways to secure the airway. This review found no difference between endotracheal intubation and other airway securing strategies for reducing deaths after acute illness or injury; however, better studies are needed.