

Evidence Update

Trauma Series

August 2003

Does albumin reduce mortality in critically ill people?

There is no evidence that albumin administration reduces the risk of death in critically ill patients with hypovolaemia, burns or hypoalbuminaemia.

Inclusion criteria

Types of studies:

All randomised controlled trials of human albumin or plasma protein fraction (PPF) administration (albumin/PPF versus no albumin/PPF, or a crystalloid solution).

Types of participants:

Critically ill patients with hypovolaemia, burns or hypoproteinaemia. Trials involving patients receiving pre-operative volume loading or haemodilution, and trials of albumin administration during paracentesis were excluded.

Types of intervention:

Human albumin solution or plasma protein fraction (PPF).

Types of outcome measures:

The principal outcome measure was mortality from all causes assessed at the end of the follow up period scheduled for each trial.

Results

- 32 trials met the inclusion criteria and reported death as an outcome. Sixteen were adequately concealed.
- There were 177 deaths among 1519 trial participants.
- For each patient category the risk of death in the albumin treated group was higher than in the comparison group.
- For hypovolaemia the relative risk of death following albumin administration was 1.46 (95% confidence interval 0.97 to 2.22), for burns the relative risk was 2.40 (1.11 to 5.19), and for hypoalbuminaemia the relative risk was 1.38 (0.94 to 2.03).
- Overall, the risk of death in patients receiving albumin was 14% compared to 9% in the control groups, an increase in the risk of death of 5% (2% to 8%). These data suggest that for every 20 critically ill patients treated with albumin there is one additional death.

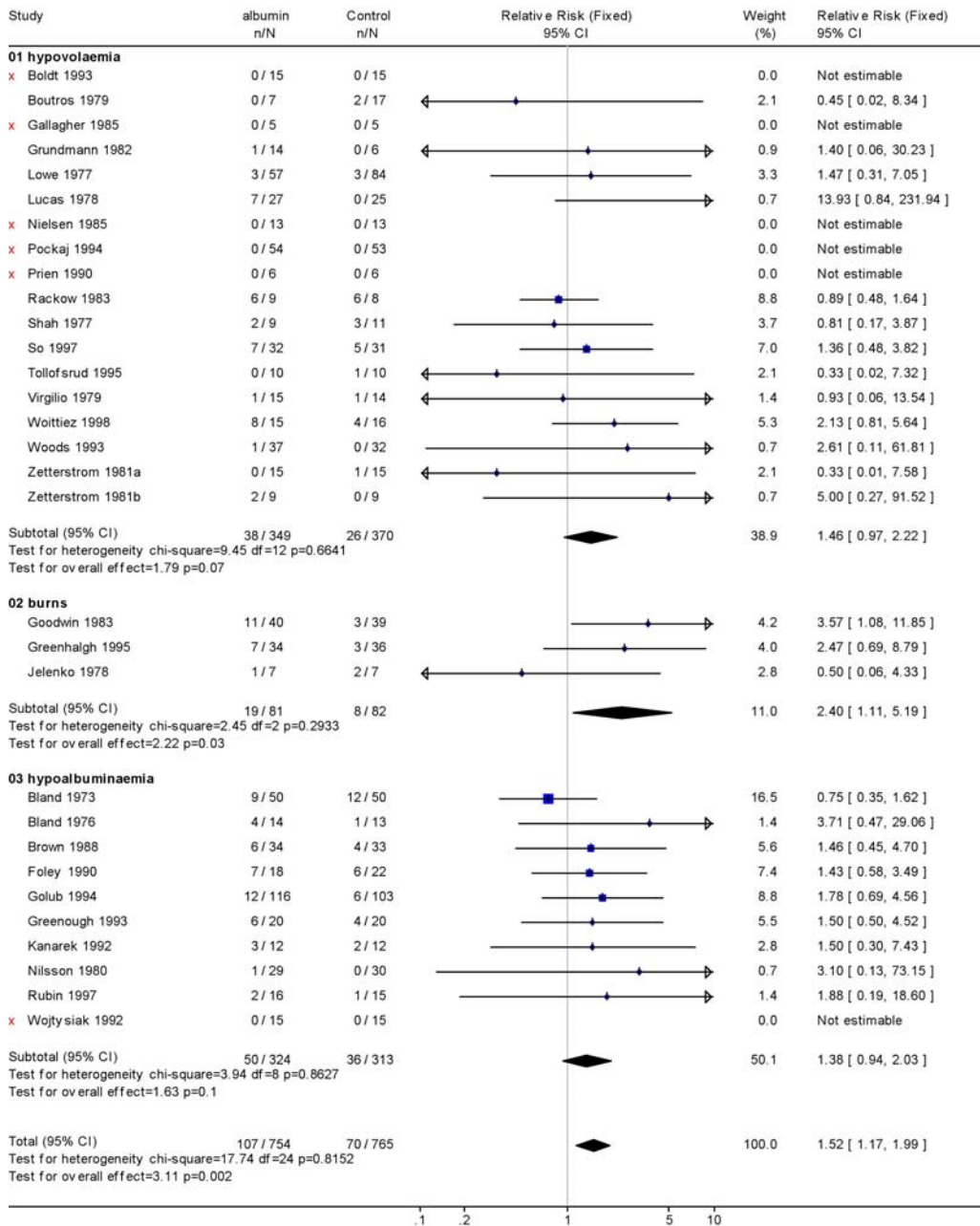


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Adapted from The Albumin Reviewers (Alderson P, Bunn F, Lefebvre C, Li Wan Po A, Li L, Roberts I, Schierhout G). Human albumin solution for resuscitation and volume expansion in critically ill patients (Cochrane Review). In: The Cochrane Library, Issue 3, 2003. Oxford: Update Software.

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Review: Human albumin solution for resuscitation and volume expansion in critically ill patients
 Comparison: 01 supplemental albumin
 Outcome: 01 deaths



Reviewer's conclusions

Implications for practice:

It would seem reasonable to conclude clinicians considering using human albumin in critically ill patients should review their policies.

Implications for research:

A strong argument could be made that albumin should not be used outside the context of a properly concealed and otherwise rigorously conducted randomised controlled trial with mortality as the end point. Until such data become available, there is also a case for a review of the licensed indications for albumin use.