Effectiveness of interventions to prevent delirium in hospitalized patients: a systematic review

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Authors' objectives
To determine the effectiveness of interventions to prevent delirium in hospitalised patients.

Searching
MEDLINE was searched from January 1966 to May 1995, and CINAHL from January 1982 to May 1995; bibliographies of included studies were examined. The search strategy is given.

Study selection
Study designs of evaluations included in the review
Controlled trials, both randomised and non-randomised. Studies published in French or English were included.

Specific interventions included in the review
Psychiatric consultation or interview; post-operative re-orientation by nursing personnel; post-operative education of the patient's spouse; pre-operative education; pre-operative psychiatric assessment plus post-operative psychotherapy; pre- and post-operative nursing assessments; pre- and post-operative clinical assessment.

Participants included in the review
Elderly orthopaedic and medical patients; middle-aged cardiac surgery patients.

Outcomes assessed in the review
Incidence of delirium at follow-up. This was assessed mainly in terms of the number of patients developing symptoms of delirium, though the actual symptoms assessed varied between studies.

How were decisions on the relevance of primary studies made?
One author selected the papers for review by assessment against the inclusion criteria.

Assessment of study quality
Study quality was assessed using a 6-item checklist assessing randomisation, comparability of groups at baseline, equal treatment of groups, blinded outcome assessment, completeness of follow-up and intention to treat analysis. The quality of the studies is described. The papers were assessed for validity by two independent reviewers.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.

Methods of synthesis
How were the studies combined?
A narrative synthesis was undertaken, with some description of the effect of methodological flaws on effect sizes.

How were differences between studies investigated?
Differences between the studies were described. The association between individual study quality and magnitude of the effect size was also assessed.
**Results of the review**
Ten trials (7 non-randomised and 3 randomised) with a total of 999 patients were included.

No quantitative summary was possible. The absolute risk reduction (i.e. the difference in the incidence of delirium between treated and control groups) varied between studies from -13% to +81%. Only one study showed a significant reduction in the treated group.

**Authors' conclusions**
Interventions to prevent delirium among surgical patients may be modestly effective, but further trials are necessary.

**CRD commentary**
There is little evidence on the basis of this group of studies that such interventions may be modestly effective. Only one study shows a significant reduction in the incidence of delirium, and this is a non-randomised trial without blinded assessment of outcomes. The majority of included studies are non-randomised. Of the two randomised controlled trials for which a risk reduction could be computed, one actually showed an increase in the incidence of delirium. However this trial did not employ blinded outcome assessment. The other randomised controlled trial showed a non significant benefit with treatment, but it did not appear to have similar treatment and control groups at baseline. Overall, there is such heterogeneity among the trials in terms of study population, outcomes, quality, methodology, and interventions used, that it is not possible to make any useful summary of the effectiveness of interventions to prevent delirium. The authors' conclusions about the need for further trials appears warranted. Finally, any future review in this area may wish to employ a wider search strategy with a wider range of databases.

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