Palliative sedation in end-of-life care and survival: a systematic review
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CRD summary
The review found that palliative sedation in terminally ill adults with cancer, when appropriately indicated and used correctly, did not appear to have a detrimental effect on survival. The reliability of the authors’ conclusions is unclear because of the low quality of the included studies, lack of reporting of study quality details and some limitations of the review process.

Authors' objectives
To evaluate the effect of palliative sedation on survival in patients with advanced cancer.

Searching
MEDLINE and EMBASE were searched from January 1980 to December 2010 to identify studies published in English. Search terms were reported. A manual search of the bibliographies of identified articles was performed.

Study selection
Studies that compared length of survival in sedated and non-sedated terminally ill adult patients with cancer were eligible for inclusion. Studies had to present a reliable measurement of outcome. Case studies, letters, reviews, editorials and studies that focused on euthanasia and assisted suicide, ethical aspects or opinions were not eligible.

The included studies were based at various locations (hospital, hospice, acute palliative care unit, home). Reasons for sedation included breathlessness, dyspnoea, pain, delirium, nausea/vomiting, mental anguish, insomnia, severe itching, anxiety/psychological distress/depression, bleeding, restlessness, psychological and physical distress. The most commonly used drug was midazolam; other drugs used for sedation were haloperidol, chlorpromazine, morphine, methotrimeprazine, propofol, phenobarbital, diazepam and other benzodiazepines. Drugs were given in proportional, intermittent or continuous modes. Where reported, mean duration of sedation ranged from 0.8 to 12.6 days and median length of sedative use ranged from 0.9 to 5.0 days.

Two reviewers independently assessed studies for inclusion; disagreements were resolved by discussion and consensus.

Assessment of study quality
Quality was assessed using a method reported by Hawker et al. (2002) in which each part of the study was appraised as good, fair, poor or very poor.

The authors do not state how many reviewers performed the study assessment.

Data extraction
Length of survival of sedated and non-sedated patients was tabulated for each study. Length of survival was defined according to the definition in each original study as either the number of days from hospice/hospital admission/start of home care to death or as time from the start of sedation therapy to death.

Two reviewers performed the data extraction; disagreements were resolved by discussion and consensus.

Methods of synthesis
The authors used a narrative synthesis rather than meta-analysis because of the heterogeneity in study designs and methodologies.

Results of the review
Eleven studies (2,325 patients) were included in the review. Seven studies were retrospective and four were prospective; none were randomised. All studies were classified as either fair or fair-poor quality. Sample sizes varied from 76 to 548 patients.
Median/mean survival of patients who received sedation ranged from seven to 36.6 days and for non-sedated patients ranged from four to 39.5 days. The authors stated that these differences were not statistically significant; one of the 11 studies reported a significant p-value showing longer survival following sedation.

**Authors’ conclusions**
Sedation when indicated appropriately and used correctly did not appear to have a detrimental effect on survival.

**CRD commentary**
The study addressed a clear question. Inclusion criteria were broad but appropriate. The search was limited to studies published in English so the results may have been affected by language or publication bias. Methods to minimise bias and error were used during study selection and data extraction; it was unclear whether this was also the case for quality assessment. The authors acknowledged the overall poor to fair quality of the included studies. Few participant details were reported and this made the generalisability of the results unclear.

The authors conclusions reflect the evidence presented but given the low quality of the included studies, lack of reporting of study quality details and some limitations of the review process, the reliability of the authors’ conclusions is unclear.

**Implications of the review for practice and research**

**Practice:** The authors stated that palliative sedation was a medical intervention that must be considered as part of a continuum of palliative care.

**Research:** The authors stated that they thought randomised trials would not be ethically justified.

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