The effects of fluid status and fluid therapy on the dying: a systematic review

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Authors' objectives
To examine the existing clinical evidence pertaining to the effects of fluid status and fluid therapy on the dying.

Searching
Several databases were searched including: MEDLINE from 1966 to March 1996 (the keywords used were presented); CINAHL from 1982 to February 1996; and Current Contents from week number 27 of 1995 to week number 15 of 1996. Additional material was obtained by handsearching six palliative care journals, examining the reference lists of all included and related articles and eleven selected books, and through communication with experts in the field.

Study selection
Study designs of evaluations included in the review
A variety of study designs, such as cross-sectional, prospective single cohort, and retrospective natural experiment. An article was included on the basis of the following: if it was published in a biomedical journal; it was an original article reporting the results of a specific fluid therapy on patients; it involved human patients described as dying or terminally ill, or as receiving hospice care, palliative care or terminal care; it reported outcomes derived from the assessment of individual patients; it reported clinical outcome measures other than laboratory data; and it was published in English.

Specific interventions included in the review
Fluid therapy.

Participants included in the review
Patients dying from any disease in any care setting. Participants in the reviewed studies were in either a palliative care setting or a hospital oncology unit, and almost all had cancer.

Outcomes assessed in the review
Any patient-derived outcome. Thirst and dry mouth were most commonly used to measure the outcome.

How were decisions on the relevance of primary studies made?
The eligibility of a study was assessed by one reviewer. If the eligibility of an article was uncertain, a second reviewer was involved and the issue was resolved by consensus.

Assessment of study quality
The instrument suggested by Cho and Bero (see Other Publications of Related Interest) was used to assess the methodological quality of included studies. It contained 23 scorable items relating to study design and 22 items concerning the consistency of the conclusions with the results. The overall score for an article could fall between zero (lowest quality) and one (highest quality). The quality of an article was assessed independently by two reviewers without blinding. Any disagreements on the scoring of individual items were resolved by consensus.

Data extraction
The data were extracted from each included article, in an unblinded fashion, by one reviewer using a data extraction form. The authors of the primary studies were contacted if the information reported in an article required clarification.

Methods of synthesis
How were the studies combined?
The information obtained from the included studies was displayed in tabular format and described narratively.
How were differences between studies investigated?
The information obtained from the included studies was displayed in tabular format and described narratively. Problems of generalisibility, due to poorly defined patient populations, were discussed.

**Results of the review**
Six studies with a total of 532 participants were included.

The mean methodological quality score (scale 0 to 1) for the six eligible articles was 0.42 (standard deviation 0.08), with individual scores ranging from 0.36 to 0.58.

There was little relationship between fluid status or fluid therapy and the experience of thirst (3 studies). Neither of the two studies that examined the possible specific relationship between serum sodium and thirst were able to find one.

One study reported no correlation between the use of intravenous fluids and the level of consciousness of the patients. However, it did suggest that poorer states of consciousness were correlated with higher serum sodiums, serum osmolalities, and urine osmolalities. One study concluded that respiratory tract secretions were not significantly related to fluid status in the dying. Little relationship was found between the volume of intravenous fluids received by patients and the prevalence of oedema or ascites.

**Authors' conclusions**
It was impossible to draw firm conclusions regarding clinical care given the limitations present in the six studies included in this review. The only recourse available at present is to assess each patient's individual circumstances, including the patient's and family's wishes, in order to formulate recommendations regarding fluid therapy for that patient. The ethical and legal aspects of this issue may become clearer if evidence to clarify the clinical aspects can be obtained through more rigorous research.

**CRD commentary**
The review was systematic and rigorous. The literature search was comprehensive, although EMBASE was not searched and only English language articles were included. The inclusion criteria were clearly described and the methodological quality of the included studies was assessed. The primary data from the individual studies were presented. The authors discussed some limitations of their review.

**Implications of the review for practice and research**
The authors of the review highlighted some questions that require future research. Researchers need to agree on a common set of outcomes and measurement tools for use in palliative care research in the future, in order to facilitate the comparison and synthesis of data across a variety of studies. Also, there is a need to clearly identify the patient characteristics regarding the intervention.

**Bibliographic details**

**PubMedID**
9447811

**Other publications of related interest**
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Subject indexing assigned by NLM

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.