Thirst, interdialytic weight gain, and thirst-interventions in hemodialysis patients: a literature review.

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Authors' objectives
To review studies on the prevalence of thirst in haemodialysis (HD) patients and the relationship between thirst and interdialytic weight gain (IWG), as well as intervention studies in which thirst was used as an outcome variable.

Searching
MEDLINE, CINAHL, EMBASE, PsycFIRST, and the Science Citation Index were searched for Dutch, English, French and German papers published between 1980 and December 1999. The keywords used were 'thirst and hemodialysis'; a free-text search for 'thirst' was also conducted. Reference lists were handsearched.

Study selection
Study designs of evaluations included in the review
Any study in which HD-associated thirst was a measured variable was included. Reviews, conference abstracts, papers that did not report research or did not include HD patients, were excluded.

Specific interventions included in the review
Any intervention to treat HD-associated thirst. The included interventions were alteration of dialysis mechanisms, the use of angiotensin enzyme-converting (ACE)-inhibitors, and a low-protein diet.

Participants included in the review
Any patient undergoing HD were included. The patients were aged from 10 to 87 years, and males comprised 20 to 100% (where age and gender were stated). The individual study populations varied widely: they included patients who were stable, non-diabetic, diabetic, normo- hypo- and hypertensive, suffering from cardiovascular co-morbidity, or with severe IWG.

Outcomes assessed in the review
Prevalence of thirst and IWG were assessed.

How were decisions on the relevance of primary studies made?
The author does not state how the papers were assessed for relevance, beyond the exclusion criteria mentioned under 'Study Designs'.

Assessment of study quality
The author does not report the method used to assess validity, or how the validity assessment was performed.

Data extraction
The author does not state how the data were extracted for the review. The study factors that were tabulated included demographics, the number of centres, duration of HD, and disease characteristics.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative.

How were differences between studies investigated?
Differences between the studies were discussed in a narrative.
Results of the review
Twenty-three studies (including 4 multicentre studies) fulfilled the selection criteria and were included in the analysis. Nine of the studies were controlled.

The prevalence of thirst varied between 6 and 95% across the studies. In most studies more thirst was related to more weight gain. However, the studies were difficult to compare due to methodological differences.

Increasing the frequency of dialysis sessions, or varying the concentration of sodium in the dialysate, produced inconsistent and conflicting results. ACE-inhibitors tended to reduce thirst. A single study of a low-protein diet observed a decrease in thirst.

Authors’ conclusions
Thirst is a common and severe symptom in HD patients, but difficult to investigate. A causal relationship between IWG and thirst is not proven. Almost no conclusions could be drawn with regard to the effectiveness of any intervention, due to the methodological differences and weaknesses and the small unrepresentative samples.

CRD commentary
The review was based on clear questions. The search strategy appears to have been reasonably comprehensive. The validity assessment and data extraction were not well described. The included studies were detailed sufficiently in tabular format and in the narrative. The author's conclusion appears to follow from the results presented.

Implications of the review for practice and research
Practice: The author did not state any implications for practice.

Research: Empirical research into the prevalence and timing of HD-associated thirst is needed. Systematic reviews of thirst interventions should be undertaken in other populations, such as terminal, pre- and post-operative patients, and diabetics. The effects of low-sodium diets have yet to be investigated. Symptomatic interventions, such as ice cubes, chewing gum and distraction, are frequently used by patients, but have not been studied.

Bibliographic details

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MeSH
Angiotensin-Converting Enzyme Inhibitors /pharmacology /therapeutic use; Bias (Epidemiology); Hemodialysis Solutions /adverse effects /chemistry; Humans; Kidney Failure, Chronic /complications /therapy; Prevalence; Renal Dialysis /adverse effects /methods; Research Design /standards; Sample Size; Thirst /drug effects /physiology; Treatment Outcome; Weight Gain /drug effects /physiology

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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.