Hypnosis for nausea and vomiting in cancer chemotherapy: a systematic review of the research evidence

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CRD summary
The authors' conclusion that hypnosis could be a clinically valuable treatment for anticipatory and cancer-induced nausea and vomiting is supported by the evidence provided but further high quality studies are required. Incomplete reporting of review methods, differences between studies and small sample sizes, make the reliability of these conclusions difficult to determine.

Authors' objectives
To evaluate the effectiveness of hypnosis for the alleviation of cancer chemotherapy-induced nausea and vomiting.

Searching
MEDLINE, EMBASE, AMED, CISCOM, CINAHL, PsycINFO, and the Cochrane Library databases were searched to March 2005. Search terms were reported. The National Research Register (UK) and clinicaltrials.gov (US) were searched to identify any unpublished or ongoing research. Reference lists of relevant articles were also scanned to identify relevant studies. No language restrictions were applied.

Study selection
Controlled clinical trials evaluating hypnosis or hypnotherapy for the treatment of cancer chemotherapy-induced nausea and vomiting in patients diagnosed with cancer and undergoing chemotherapy were eligible for inclusion. Control groups were required to evaluate comparative therapy or no treatment. The main outcomes of interest were frequency and severity of nausea and vomiting. Trials that did not have cancer chemotherapy-induced nausea and vomiting as the target symptom were excluded.

Most trials included training in self-hypnosis. The duration of hypnosis sessions varied between studies. Control groups included treatment as usual, therapist contact and cognitive-behaviour therapy. Participants in the included trials were children aged from five to 18 years and adults aged from 19 to 49 years. Most of the included trials were assessing paediatric patients. Outcome measurement scales varied between trials and included Visual Analogue Scale and the Stanford Hypnotic Clinical Scale for Children and Likert rating scales.

The authors did not state how papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
Validity assessment of clinical trials was conducted using criteria recommended in CRD Report 4 (2001, 2nd edition). This included evaluation of randomisation, baseline comparison of characteristics, method of dealing with missing values, loss to follow-up/withdrawals, measures of compliance and outcome measures reported. In addition clinical experts commented on each trial using a framework developed for the review.

Two reviewers independently assessed validity. Disagreements were resolved through discussion. Where consensus could not be reached a third reviewer was consulted.

Data extraction
Data on post-treatment means and standard deviations for nausea and/or vomiting were extracted using a standard form. The outcomes of nausea and vomiting were combined and a mean effect size was calculated for each comparison of hypnotic treatment against non-hypnotic treatment. Where a trial compared more than one treatment, separate effect sizes were calculated for each treatment arm. Effect sizes (d) were calculated as the standardised difference in post-treatment scores between hypnosis and comparator treatment.
Two reviewers independently extracted data. Disagreements were resolved through discussion, when consensus could not be reached a third reviewer was consulted.

**Methods of synthesis**
Data from individual trials were combined in a meta-analysis. The mean effect sizes across trials (d) were weighted for sample size.

**Results of the review**
Six randomised controlled trials (RCTs) were included in the review (n=206). Only four RCTs (n=175) provided enough data to be included in the meta-analysis. In terms of methodological quality, studies were assessed as having small sample sizes (four RCTs), unknown method of randomisation or randomisation (four RCTs), and high losses to follow up (two RCTs). Clinical comments indicated that all six trials made appropriate use of intervention, controls and outcome measures.

The weighted mean effect size indicated that hypnosis was more effective in comparison with usual treatment (d=0.99, three RCTs, n=62), therapist contact (d=0.43, three RCTs, n=82) and cognitive behaviour therapy (d=0.18, two RCTs, n=60) in studies of children and adults.

**Authors' conclusions**
Meta-analysis demonstrated that hypnosis could be a clinically valuable intervention for anticipatory and cancer chemotherapy-induced nausea and vomiting, particularly in children. Overall the trials included in the review had small sample sizes. Despite this, meta-analysis showed a large effect size of hypnotic treatment in comparison with usual treatment, and at least as large an effect as cognitive-behaviour therapy. Further high quality appropriately powered studies are required.

**CRD commentary**
Inclusion criteria for intervention, participants, outcomes and study design were clearly defined. Several relevant sources were searched. Attempts were made to reduce language and publication bias. Methods were used to minimise reviewer errors and bias in the assessment of validity and extraction of data, but it was not clear whether similar steps were taken in study selection. Validity was assessed using established criteria and some results of the assessment were reported in the text and tables. Statistical heterogeneity was not assessed. There were differences between trial interventions and measurement of outcomes, so it may not have been appropriate to combine the studies in a meta-analysis. Some results and levels of statistical significance were reported in the text and tables. Sample sizes were generally small and, as the review authors acknowledge, the analysis may have been underpowered. The authors conclusions are supported by the evidence provided and their recommendation for further research in this area appears appropriate. However, due to the incomplete reporting of review methods and the small number of appropriately powered trials, the authors’ conclusions may not be reliable.

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

Research: The authors stated that further methodologically rigorous research is needed. Future studies should be appropriately powered and investigate the feasibility, acceptability and effectiveness of hypnosis in children, adolescents and adults with cancer. Full details of the hypnotic intervention should be included, and studies should take into account "suggestibility", presence or absence of the therapist, and measure both actual and anticipatory nausea and vomiting.

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