Effects of brief exposure to water, breast-milk substitutes, or other liquids on the success and duration of breastfeeding: a systematic review

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CRD summary
The authors of this review concluded that the effect of brief exposure to water, breast-milk substitutes, or other liquids on the success and duration of breast-feeding was uncertain. Since only one poorly reported study was found on this subject, this conclusion seems appropriate.

Authors' objectives
To evaluate the effect of supplemental fluids or feedings during the first days of life on the overall duration of breast-feeding and rate of exclusive breast-feeding among healthy infants.

Searching
MEDLINE (1966 to April 2004), EMBASE (1980 to December 2003), CINAHL (1982 to April 2004), the Cochrane Controlled Trials Register (Issue 1, 2004) and the Cochrane Database of Systematic Reviews (Issue 1, 2004) were searched for relevant studies, without any language restrictions; the search terms were reported. This was supplemented by searching conference abstracts and reference lists from retrieved studies. Experts in the field, including the La Leche League International, were also contacted. Abstracts were excluded from the review.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion in the review.

Specific interventions included in the review
Studies comparing fluids such as water, water-based drinks, glucose solution or breast-milk substitutes (i.e. infant formula or food for special medical purposes) against breast-feeding exclusively were eligible for inclusion. The only intervention evaluated in the review was 5% glucose water.

Participants included in the review
Studies including healthy full-term infants (38 to 42 weeks' gestation, birth weight >2,500 g) were eligible for inclusion in the review.

Outcomes assessed in the review
Studies were eligible for inclusion if they measured the following: the proportion of exclusively breast-fed infants at 6 months of age and other fixed time points up to 6 months; the proportion of infants receiving any breast milk at 6 months of age and other fixed time points up to 6 months; the proportion of infants being breast-fed at 1 year; the overall duration of breast-feeding; the proportion of infants receiving infant formula at fixed time points up to 6 months.

How were decisions on the relevance of primary studies made?
Two reviewers independently screened studies for inclusion in the review.

Assessment of study quality
The included studies were assessed for allocation concealment, blinding, intention-to-treat analysis and follow-up. Two reviewers (not blinded to authorship or journal) independently conducted the validity assessment.

Data extraction
Two reviewers independently extracted the study data. Data on study characteristics and quality were extracted.
How were the studies combined?
The included study was summarised.

How were differences between studies investigated?
Only one study was included in the review.

Results of the review
One RCT (n=170) met the review's inclusion criteria.

The included RCT provided no information about the methods used. Intention-to-treat analysis was not performed and the number of withdrawals, if any, was unclear.

This study found formula feeding at 4 weeks was significantly more frequent in infants fed 5% glucose water than breast-fed children (34% versus 18%, p<0.05) and that breast-feeding at 16 weeks was significantly lower in the glucose water group (43% versus 67%, p<0.01).

Authors' conclusions
There remained considerable uncertainty about the effect of brief exposure to water, breast-milk substitutes or other liquids on the success and duration of breast-feeding.

CRD commentary
This review had a well-defined question, supported by appropriate inclusion criteria. Attempts were made to identify all the relevant published and unpublished literature in any language through searches of electronic databases and other methods. Abstracts were excluded, which may have led to publication bias. Validity was assessed according to established criteria, and attempts to minimise errors and bias by using two independent reviewers were made throughout the review. Given that just a single poorly-reported RCT met the inclusion criteria, the authors' conclusions about the high degree of uncertainty in this area seem appropriate.

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

Research: The authors stated that the effects of early supplementation on the success and/or duration of future breast-feeding should be addressed in well-conducted RCTs.

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