Alleviating postnatal perineal trauma: to cool or not to cool?
Steen M, Briggs M, King D

CRD summary
This review examined localised cooling for perineal trauma following childbirth. The authors concluded that it may be effective in reducing inflammatory responses, but that further research is needed to evaluate the impact on healing. The review used relatively rigorous methodology, however, it is difficult to assess the reliability of the conclusions as no statistical data or effects sizes were reported.

Authors' objectives
To assess the evidence for the use of localised cooling methods to alleviate perineal trauma following childbirth.

Searching
MEDLINE, CINAHL, MIDIRS and the trials databases of the Cochrane Pregnancy and Childbirth Group were searched for studies published between 1960 and 2005; the search terms were reported. References of relevant publications were checked. Abstracts and unpublished studies were excluded.

Study selection
Randomised controlled trials (RCTs) or quasi-randomised trials were eligible for inclusion. Studies were required to examine cold therapy for perineal trauma sustained as a result of injury during childbirth. The included studies examined cold or iced sitz baths, and cooling devices such as ice packs and cold or cooling gel pads. The control interventions included ray lamps, witch hazel, hygiene only, warm sitz baths, warm packs, epifoam, no treatment and megapulse therapy. No inclusion criteria were stated for the outcomes. The outcomes reported in the included studies included pain reduction, reduction of inflammatory response, adverse effects on healing, use of other analgesia, maternal satisfaction and long-term benefits. A number of different measures and follow-up times were used to assess pain and inflammatory response.

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

Assessment of study quality
Three reviewers assessed studies for validity using the criteria of allocation concealment, randomisation and blinding. It appears that use of a power calculation and intention-to-treat analysis were also assessed.

Data extraction
It appears that three reviewers extracted the data using a data extraction sheet. Study authors were contacted for further information.

Methods of synthesis
The studies were combined in a brief narrative that also discussed some differences between the studies.

Results of the review
Eight studies (n=1,050) were included in the review. Sample sizes were mostly small though they ranged from 20 to 316.

The quality of the included studies was variable. Four reported adequate allocation concealment and four reported using blinded outcome assessment.

Six studies reported some evidence of effectiveness of cooling in relieving pain, four reported that cooling reduced inflammatory response, and two reported high maternal satisfaction. Evidence on adverse effects, healing, use of alternative analgesics and impact on long-term recovery was limited. No statistical results were reported.
Authors' conclusions
The authors appear to conclude that localised cooling may reduce the inflammatory response, but that further research is required to determine its impact in healing.

CRD commentary
The review question was clear, as were the inclusion criteria with the exception of outcomes. The authors searched a number of relevant databases, but their decision to limit the review to studies published as full reports might have increased the possibility that some relevant studies were not included in the review. The authors appear to have used measures to reduce bias and error in the assessment of study validity and the extraction of data, but did not report doing so in the selection of studies. The validity assessment used appropriate criteria. Given the clinical heterogeneity between the studies, the decision to employ a narrative synthesis was appropriate. The synthesis presented was extremely brief and did not include any statistical results from the included studies, which were also not included in the study tables. The review appears to have been reasonably well-conducted but, given the lack of reporting of study results, it is difficult to determine the reliability of the conclusions.

Implications of the review for practice and research
Practice: The authors stated that localised cooling devices appear more acceptable to women than cold or iced sitz baths.

Research: The authors stated that further trials should include a no treatment group, should use pain scales compatible with those previously employed, should include rates of healing and maternal satisfaction as primary outcomes, and should undertake long-term follow-up.

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