
Can home monitoring reduce mortality in infants at increased risk of sudden infant death syndrome? A systematic review

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CRD summary

This review found that there was insufficient evidence that home monitoring of infants can reduce the incidence of sudden infant death syndrome. Reporting flaws mean that the results should be interpreted with some caution but the authors' conclusions on the paucity of good quality evidence are likely to be reliable.

Authors' objectives

To evaluate the effectiveness of home monitoring of infants in preventing sudden infant death syndrome (SIDS).

Searching

MEDLINE, EMBASE, CINAHL and PsycINFO were searched to June 2010 for relevant studies; search terms were reported. Cochrane Central Register of Controlled Trials (CENTRAL) was searched. Major paediatric journals were handsearched to January to June 2010 for additional studies. Reference lists of retrieved articles were searched and the reviewers contacted experts for information about unpublished trials and trials in progress in three identified programmes. There were no language restrictions.

Study selection

Randomised controlled trials, controlled clinical trials and prospective cohort studies with specified follow-up of home monitoring of infants under two years of age and that evaluated mortality data were eligible for inclusion.

The included population were healthy full-term infants with family history of SIDS or siblings of deceased infants whose death were attributed to SIDS, and at-risk infants including those with sleep apnoea, premature infants, infants of mothers with substance-use disorders and infants with previous apparent life threatening events. The monitors included were cardiorespiratory monitors, including heart rate monitors, apnoea monitors and movement detection monitors.

Two reviewers independently performed the study selection.

Assessment of study quality

Methodological quality was assessed in terms of recruitment, randomisation, allocation concealment, comparability of the groups at baseline, use of blinding, outcome measures used, follow-up, treatment of confounding factors and use of statistical analyses. Quality components of some included studies were discussed. The reviewers classified the studies according to the preferred reporting items for systematic reviews and meta-analyses (PRISMA) statement and The Cochrane Handbook.

Data extraction

Outcome data were extracted as reported in the studies using a standardised data extraction form. Confidence intervals were calculated using assumptions based on a Poisson distribution.

The authors did not state how many reviewers performed the data extraction.

Methods of synthesis

The results were summarised in a narrative synthesis.

Results of the review

Eleven studies (reported as having 2,210 patients) were included in the review: one randomised controlled trial and 10 cohort studies. The RCT was of poor quality with randomisation and allocation concealment not reported and no presentation of baseline data of the groups. Few methodological details were reported in the cohort studies. Two studies reported parental experiences of home monitoring. Follow-up ranged from 3.2 weeks to 10 months with a mean monitoring time of 5.5 months.

In the RCT (100 siblings of SIDS infants), parents were allocated either weighing scales or home monitors. One infant died after withdrawal of the monitor.

During monitoring, 11 deaths occurred that were described as SIDS death with an event rate of 5.0 deaths per 1,000 (95% CI 1.4 to 11.0). Event rates in non-monitored infants ranged from 1.2 to 5.6 deaths per 1,000.

Authors' conclusions

There was no high-level evidence that home monitoring was effective in preventing SIDS. Further research was required but may be difficult because of ethical concerns.

CRD commentary

The review addressed a clear question. Criteria for the inclusion of studies were stipulated. Appropriate databases were searched for relevant studies without language restrictions. Attempts were made to identify unpublished studies. Retrospective studies were excluded, although there were some included studies where it was unclear whether the studies were prospective or retrospective in design. Steps to minimise errors and biases were reported for study selection but not for data extraction. Methodological quality was assessed using sensible criteria but only some quality-related items for some studies were discussed briefly in the review. There were some discrepancies in reporting between the tables and text in the review.

Reporting flaws mean that the results should be interpreted with some caution but the authors' cautious conclusions on the lack of evidence are likely to 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 a methodologically rigorous controlled study evaluating the effectiveness of home monitoring of infants was required but may not be possible because of ethical concerns.

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