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[Intervention Review]

Responsive versus scheduled feeding for preterm infants

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ABSTRACT

Background

Feeding preterm infants in response to their hunger and satiation cues (responsive, cue-based, or infant-led feeding) rather than at scheduled intervals might enhance infants' and parents' experience and satisfaction, help in the establishment of independent oral feeding, increase nutrient intake and growth rates, and allow earlier hospital discharge.

Objectives

To assess the effect of a policy of feeding preterm infants on a responsive basis versus feeding prescribed volumes at scheduled intervals on growth rates, levels of parent satisfaction, and time to hospital discharge.

Search methods

We used the standard search strategy of the Cochrane Neonatal Review group to search the Cochrane Central Register of Controlled Trials (CENTRAL 2016, Issue 1), MEDLINE via PubMed (1966 to 17 February 2016), Embase (1980 to 17 February 2016), and CINAHL (1982 to 17 February 2016). We also searched clinical trials' databases, conference proceedings, and the reference lists of retrieved articles for randomised controlled trials and quasi-randomised trials.

Selection criteria

Randomised controlled trials (RCTs) or quasi-RCTs that compared a policy of feeding preterm infants on a responsive basis versus feeding at scheduled intervals.

Data collection and analysis

Two review authors assessed trial eligibility and risk of bias and undertook data extraction independently. We analysed the treatment effects in the individual trials and reported the risk ratio and risk difference for dichotomous data and mean difference (MD) for continuous data, with respective 95% confidence intervals (CIs). We used a fixed-effect model in meta-analyses and explored the potential causes of heterogeneity in sensitivity analyses. We assessed the quality of evidence at the outcome level using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach.

Main results

We found nine eligible RCTs including 593 infants in total. These trials compared responsive with scheduled interval regimens in preterm infants in the transition phase from intragastric tube to oral feeding. The trials were generally small and contained various methodological weaknesses including lack of blinding and incomplete assessment of all randomised participants. Meta-analyses, although limited by data quality and availability, suggest that responsive feeding results in slightly slower rates of weight gain (MD -1.36, 95%

CI -2.44 to -0.29 g/kg/day), and provide some evidence that responsive feeding reduces the time taken for infants to transition from enteral tube to oral feeding (MD -5.53 , 95% CI -6.80 to -4.25 days). GRADE assessments indicated low quality of evidence. The importance of this finding is uncertain as the trials did not find a strong or consistent effect on the duration of hospitalisation. None of the included trials reported any parent, caregiver, or staff views.

Authors' conclusions

Overall, the data do not provide strong or consistent evidence that responsive feeding affects important outcomes for preterm infants or their families. Some (low quality) evidence exists that preterm infants fed in response to feeding and satiation cues achieve full oral feeding earlier than infants fed prescribed volumes at scheduled intervals. This finding should be interpreted cautiously because of methodological weaknesses in the included trials. A large RCT would be needed to confirm this finding and to determine if responsive feeding of preterm infants affects other important outcomes.

PLAIN LANGUAGE SUMMARY

Responsive feeding versus scheduled feeding for preterm infants

Review question: Does a policy of feeding preterm infants on a responsive basis compared to feeding prescribed volumes at scheduled intervals improve growth, length of hospital stay and parent satisfaction?

Background: Feeding preterm infants in response to their hunger and satiation cues (responsive, cue-based, or infant-led feeding) rather than at scheduled intervals might enhance infants' and parents' experience and satisfaction, help in the establishment of independent oral feeding, increase nutrient intake and growth rates, and allow earlier hospital discharge.

Study characteristics: We searched for all available evidence up to January 2016. We found nine eligible randomised controlled trials (including a total of 593 infants) that examined whether feeding preterm infants in response to their own feeding and satiation cues (sometimes called 'demand' feeding) is better than feeding set volumes of milk at predefined intervals. These trials compared responsive with scheduled interval regimens in preterm infants in the transition phase from intragastric tube to oral feeding.

Results: Although the trials were generally small and most had some methodological weaknesses, analysis suggests that responsive feeding results in slightly slower rates of weight gain and reduces the time taken for infants to transition from enteral tube to oral feeding. The quality of this evidence is low, and the importance of this finding is uncertain as the trials did not find a strong or consistent effect on the length of hospitalisation. None of the included trials reported any parent, caregiver, or staff views.

Conclusions: This Cochrane review does not provide strong or consistent evidence that responsive feeding improves outcomes for preterm infants or their families. Responsive feeding might help infants transition more quickly to oral feeding, but more randomised controlled trials would be needed to confirm this finding.