Review: thickened feeds or metoclopramide may reduce symptoms of gastro-oesophageal reflux in healthy infants


What is the effectiveness of thickened feeds, positioning, and metoclopramide for treatment of gastro-oesophageal reflux (GER) in developmentally normal infants 1–24 months of age?

TREATMENT

CONCLUSIONS

In healthy infants 1–24 months of age with gastro-oesophageal reflux, thickened feeds may reduce symptoms, but are also associated with increased coughing. Some evidence suggests that metoclopramide may reduce symptoms. Evidence from 1 small trial suggests that supine positioning with head elevation does not differ from horizontal positioning.

MAIN RESULTS

20 trials met the selection criteria. 8 trials (median sample size 26; 3 had Jadad scores ≥3/5) assessed the effectiveness of thickened feeds using a cows’ milk based formula thickened with rice cereal/starch or carob flour (bean gum or St John’s Bread). Poolled analyses showed that thickened feeds reduced regurgitation severity scores (2 trials, n = 48, standardised mean difference [SMD] −0.94, 95% CI −1.35 to −0.52) and frequency of emesis (3 trials, n = 88, SMD −0.91, CI −1.22 to −0.61), but not reflux index (2 trials, n = 61, weighted mean difference [WMD] 0.48, CI 3.27 to 4.23) or volume of emesis (2 trials, n = 60, SMD −0.92, CI −3.13 to 1.28). Thickened feeds were also associated with more coughs/hour (2 trials, n = 90, SMD 0.38, CI 0.16 to 0.59).

5 crossover trials (median sample size 15; 2 had Jadad scores ≥3/5) assessed variations in positioning. The findings of 4 trials (1983–97) that assessed various prone positions are not summarised here because of more recent findings that such positioning is associated with an increased risk of sudden infant death syndrome, and subsequent recommendations that infants should be placed in a supine position. 1 trial (n = 10) found no difference between horizontal and elevated supine positioning.

7 trials (median sample size 30; 4 had Jadad scores ≥3/5) compared metoclopramide with placebo, with doses ranging from 0.1 mg/kg 4 times daily to 0.3 mg/kg 3 times daily. Meta-analysis showed that >1 week of metoclopramide reduced daily symptoms after 1 week (2 trials, n = 101, SMD −0.72, CI −0.98 to −0.45) and the reflux index (2 trials, n = 99, SMD −0.43, CI −0.72 to −0.14), but did not differ from placebo for number of refluxes >5 minutes (2 trials, n = 99, SMD 0.57, CI −1.16 to 2.30), number of reflux episodes with pH <4.0 during monitoring (2 trials, n = 99, SMD 0.59, CI −0.04 to 1.23), proportion of patients with improved improvement (2 trials, n = 71, odds ratio 2.81, CI 0.03 to 276), or adverse effects (4 trials, n = 120, risk difference 0.26, CI −0.02 to 0.53).

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METHODS

Data sources: Cochrane Central Register of Controlled Trials (Cochrane Library, Issue 1, 2003), Medline (1966 to January 2003), EMBASE/Excerpta Medica (1985 to January 2003), and reference lists of retrieved reviews.

Study selection and assessment: randomised controlled trials that compared thickened feeds with unthickened feeds; metoclopramide with no intervention or placebo; or various positions in developmentally normal children 1–24 months of age with GER (diagnosed by signs or symptoms or pH monitoring). 3 independent reviewers assessed the methodological quality of individual studies using the Jadad scale.

Outcomes: signs and symptoms of GER (regurgitation, respiratory symptoms, and weight gain), reflux index (percentage of total time oesophageal pH <4), number of reflux episodes, number of reflux episodes lasting >5 minutes per unit time, adverse effects such as coughing (thickened feeds) and fussiness, drowsiness, and extrapyramidal reactions (metoclopramide).

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