

# Compared with dimethicone, 2 weeks of spinal manipulation reduced infantile colic behaviour at 4–11 days after initial treatment

Wiberg JMM, Nordsteen J, Nilsson N. *The short-term effect of spinal manipulation in the treatment of infantile colic: a randomized controlled clinical trial with a blinded observer.* *J Manipulative Physiol Ther* 1999 Oct;22:517–22.

**QUESTION:** Does spinal manipulation reduce infantile colic behaviours in the short term compared with dimethicone?

## Design

Randomised (concealed), blinded (outcome assessor), controlled trial with follow up to 11 days.

## Setting

A suburb of Copenhagen, Denmark.

## Patients

Health visitor nurses recruited 50 consecutive infants who were 2–10 weeks of age, and had  $\geq 1$  violent spells of crying ( $\geq 3$  h each day) for  $\geq 5$  of the 7 previous days; typical colic behaviour during crying spells (ie, motor unrest, flexing knees against abdomen, and extending trunk, neck, and extremities) and not (or only temporarily) comforted by nappy changes, dummies, or being picked up, walked, or cradled; no known diseases or symptoms of diseases other than infantile colic; and average weight gain  $\geq 150$  grams per week. Follow up at day 11 was 80%.

## Intervention

25 infants were allocated to 2 weeks (approximately 3–5 treatment sessions, mean 3.8 sessions) of spinal manipulation by a local chiropractor. The chiropractor manipulated or mobilised vertebral column and pelvic articulations that were restricted in movement by using specific light pressure with the fingertips until normal mobility occurred in the involved segments. 25 infants were allocated to 2 weeks of daily dimethicone. Parents of infants in both groups received usual counselling from the health visitor nurse on breastfeeding technique, mother's diet, air swallowing, bottle feeding, burp technique, and observation of the infant's belly, stools and urination, vomiting, and eating and sleeping rhythm.

## Main outcome measure

Change in mean hours of infantile colic behaviour as recorded by parents in daily diaries.

## Main results

All infants allocated to spinal manipulation completed 13 days of treatment compared with only 16 infants allocated to dimethicone. The groups did not differ for mean change in hours of colic behaviour per day from before treatment to 0–3 days after treatment ( $p = 0.37$ ); however, the spinal manipulation group had greater mean decreases in hours of colic behaviour at 4–7 days (mean decrease of 2.4 v 1.0 h,  $p = 0.04$ ) and at 8–11 days (mean decrease of 2.7 v 1.0 h,  $p = 0.004$ ).

## Conclusion

2 weeks of spinal manipulation reduced infantile colic behaviour at 4–11 days compared with 2 weeks of dimethicone.

## COMMENTARY

A systematic review has evaluated the effectiveness of numerous treatments for infantile colic such as elimination of cows' milk protein, reduction of stimulation, herbal tea, and anticholinergic drugs.<sup>1</sup> The study by Wiberg *et al* adds to this body of literature by evaluating a less common treatment for infantile colic. The authors note that only 1 other prospective trial has evaluated spinal manipulation in the treatment of colic and its results were consistent with those found in the study by Wiberg *et al*.<sup>2</sup> The authors justify spinal manipulation interventions by noting similarities in symptoms of vertebral column disturbances and infant colic behaviours.

Study strengths include the randomised design, a sample size large enough to find a statistically significant difference, and blinded outcome assessors. To compare the intervention to a placebo, the authors chose dimethicone for the control group because it has been shown to be no better than placebo treatment. Because the outcome (infantile colic behaviour) was based on subjective data provided by parents, however, it would have strengthened the study design if parents had remained blinded to the treatment their infants were receiving. One way to do this would have been to provide a "sham" or "lookalike" treatment (eg, the clinician would appear to be giving manipulation but would not really). There were no dropouts in the manipulation group and 9 in the dimethicone group; the reason for all 9 dropouts was worsening of the infants' symptoms. By excluding the data on these more severe cases, the colic behaviour in the dimethicone group appears better than it actually was. Despite this bias, however, the manipulation group still scored significantly better.

The treatment of infantile colic is important because it can lead to serious consequences, such as abuse and family disruption.<sup>3</sup> Preliminary evidence indicates a potential benefit of spinal manipulation in the treatment of infantile colic.

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- 1 Lucassen PL, Assendelft WJ, Gubbels JW, *et al*. Effectiveness of treatments for infantile colic: systematic review. *BMJ* 1998;**316**:1563–9.
- 2 Klougart N, Nilsson N, Jacobsen J. Infantile colic treated by chiropractors: a prospective study of 316 cases. *J Manipulative Physiol Ther* 1989;**12**:281–8.
- 3 Froese-Fretz A, Keefe, M. The irritable infant: a model for helping families cope. *Adv Nurse Pract* 1997;**5**:63–6.

Sources of funding: The Danish Health Insurance Fund and the Danish Chiropractors Association.

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