





Complementary Therapies in Medicine

Volume 47, December 2019, 102164

Effectiveness of craniosacral therapy in the treatment of infantile colic. A randomized controlled trial ☆

M. Castejón-Castejón^a  , M.A. Murcia-González^b, J.L. Martínez Gil^c, J. Todri^d,
M. Suárez Rancel^e, O. Lena^f, R. Chillón-Martínez^g

Show more 

 Share  Cite

<https://doi.org/10.1016/j.ctim.2019.07.023> ↗

[Get rights and content](#) ↗

Highlights

- CST helps in reducing crying hours and colic severity in infantile colic.
- CST helps to increase the sleep hours in infants dealing with infantile colic.
- It would be interesting to perform a RCT with long-term follow up.

Abstract

Objectives

To determine the effectiveness of Craniosacral Therapy (CST) for the treatment of infantile colic.

Material and methods

This randomized controlled trial was conducted on 58 infants, aged 0–84 days, diagnosed with infantile colic. The babies received a 30–40 minute CST session once a week (experimental group) or no treatment (control group). Babies in the CST group received either 1, 2 or 3 CST sessions over a 14-day period. Data were collected at 4 different times over the 24-day period, day 0 (baseline), day 7, day 14 and day 24. Crying (primary outcome) and sleep (secondary outcome) were evaluated using a crying and sleep diary, and colic severity was measured using the Infant Colic Severity Questionnaire (secondary outcome).

Results

There was a statistically significant difference between groups (CST and control) in crying hours ($F=188.47$; $p<0.0005$; $\eta^2=0.78$), sleep hours ($F=61.20$; $p<0.0005$, $\eta^2=0.54$) and colic severity ($F=143.74$; $p<0.0005$, $\eta^2=0.73$) across all the time points. In comparison with the control group, CST babies reported significant and clinically relevant effects in crying hours on day 7 (-2.47 h (95%CI, -2.95 to -1.99); $p<0.0005$; $d=1.73$), on day 14 (-3.29 h (95%CI, -3.7 to -2.8); $p<0.0005$; $d=2.87$) and on day 24 (-3.20 h (95%CI, -3.7 to -2.6); $p<0.0005$; $d=2.54$); in sleep hours on day 7 (-2.47 h (95%CI, -2.95 to -1.99); $p<0.0005$; $d=1.73$) on day 14 (-3.29 h (95%CI, -3.7 to -2.8); $p<0.0005$; $d=2.87$) and on day 24 (-3.20 h (95%CI, -3.7 to -2.6); $p<0.0005$; $d=2.54$).

Conclusions

Craniosacral therapy appears to be effective and safe for infantile colic by reducing the number of crying hours, the colic severity and increasing the total hours of sleep.

Introduction

Infantile colic is a clinical condition accompanied by repeated and prolonged crying with difficulties to soothe and unsatisfied physiological needs.¹ It is found in 3–4 out of 10 young infants² with different environmental and socioeconomic conditions. Its intensity and duration vary from one infant to another, beginning in the first 15 days of life and lasting into the sixth month,^{1,3} although it can begin to subside in the third or fourth month.²

For many years the Wessel Criteria⁴ has been used for the diagnosis of colic: uncontrolled and inexplicable crying of more than three hours per day and more than three days per week during three weeks. Nevertheless, more recent studies suggest the existence of other symptoms related to infantile colic, such as difficulty passing gas and constipation.⁵

Being unable to soothe babies is stressful for parents and healthcare professionals,⁶ and also affects the quality of family life. Infantile colic is a benign condition of multifactorial etiology. Colic has been associated with gastrointestinal immaturity, alterations in fecal microflora,⁷ allergy to cow's milk protein, food intolerance⁸ and traumatic factors in pregnancy, childbirth and postnatal care.⁹

The therapeutic approaches for treating infantile colic are diverse. There are studies discussing drug administration,¹⁰ probiotics,^{11, 12, 13, 14} dietary and nutritional modifications,¹⁵ behavioral counseling for the parents,^{16,17} acupuncture,^{18, 19, 20, 21} reflexology²² physiotherapy^{23, 24, 25, 26} and manual therapy,^{27, 28, 29, 30, 31, 32, 33} among others.

Manual therapy is being readily adopted as a remedy for parents and families, and it is being integrated into the healthcare sector as a safe method for treating infantile colic.³⁴

The applications for manual therapy are very diverse. They include osteopathy,^{23,26,33,35} spinal manipulation,^{28, 29, 30, 31}^{36,37} visceral osteopathy³³ and craniosacral therapy.^{31,32} Although most studies of manual therapy and infantile colic show positive data that favors its use as a moderately safe approach, a consensus on the data as to the most accurate manual therapy approach for this clinical condition has not yet been reached.

Craniosacral Therapy (CST) is a non-invasive treatment involving light-touch manual therapy to achieve relaxation of fascial restrictions and improve the cranial rhythmic impulse (CRI).^{38,39} Cranial structures, cerebrospinal fluid (CSF), brain membranes and the spinal canal are connected. Therefore, any alteration or movement restriction may cause a somatic response and affect the musculoskeletal system, the vascular and endocrine systems as well as the autonomic nervous system (ANS).^{39,40}

Studies of CST report positive clinical outcomes for pain reduction, autonomic nervous system functions and improvement in sleeping patterns.^{40,41} Notwithstanding, there is still a need of further investigation using more rigorous methodology in order to be able to draw firm conclusions regarding its effectiveness.⁴⁰

CST shows to be safe for babies and pre-term infants.⁴² CST is applicable for babies experiencing difficulty breastfeeding,⁴³ plagiocephaly,⁴⁴ otitis media^{45,46} and infantile

colic.^{31,32} Two randomized clinical trials (RCT) evaluating CST for the treatment of infantile colic^{31,32} showed positive results; crying was reduced and sleep increased. One trial³² measured the effects of a cranial osteopathy session against the control group. The other RCT³¹ compared two manual treatments, applying spinal manipulation to one group and occipital-sacral decompression to the other group. The respectful and light touch applied in CST can help to reduce the stress generated in the body of newborns during childbirth and the first days of life.^{32,47}

Our hypothesis is that babies with infantile colic who receive CST could show significant improvement in the symptoms of infantile colic (a decrease in crying and colic severity as well as an improvement in sleep) as opposed to a group not receiving CST.

Considering the social and economic impact that infantile colic has on families, we consider it important to validate CST as a remedy for this problem. Therefore, this study aims to investigate the effect that CST have on crying hours, sleep hours and colic severity in infantile colic, in comparison with a control group.

Access through your organization

Check access to the full text by signing in through your organization.

Access through **your organization**

Section snippets

Design and registration

This study consists of a randomized, controlled clinical trial (RCT) based on a parallel-group design. After a baseline assessment, babies were randomly assigned to an experimental group (EG) with treatment, or to a control group (CG) without treatment. Data were collected at 4 different times over a 24-day period, day 0 (baseline), day 7, day 14 and day 24.

The trial was conducted between March 2015 and December 2016. Before recruiting the babies as test subjects, the trial was approved by the ...

Results

A total of 29 babies with infantile colic were randomly assigned to the CST group and 29 babies to the control group (see Fig. 1). The missing data found corresponds to the 4 dropouts of the control group. The 4 babies who left only attended the first day in which the socio-demographic characteristics and the base values were registered, they did not attend the rest of the evaluations (days 7, 14 and 24).

The babies' baseline characteristics of the socio-demographic parameters are shown in Table ...

Discussion

This randomized controlled trial showed the effectiveness of Craniosacral Therapy in an experimental group receiving CST, as opposed to a control group where the parents only received guidance on how to manage infantile colic. The results suggest significant and clinically relevant effects regarding crying, sleep and colic severity on day 7, day 14 and day 24 of the study. The babies involved in this study were infants diagnosed with colic, aged 10–84 days.

The differences in primary and ...

Conclusion

Craniosacral therapy appears to be effective and safe for infantile colic by reducing the number of crying hours, the colic severity and increasing the total hours of sleep. Further studies with long-term follow-up are needed to draw more specific conclusions supporting the effectiveness of CST in the treatment of infantile colic. ...

Acknowledgments

The present research study is associated to the Ph. D. thesis "Effectiveness of Craniosacral Therapy in the treatment of infantile colic". The authors wish to thank all the families for their support and participation in this trial. ...

[Special issue articles](#) [Recommended articles](#)

References (59)

J. Alcantara *et al.*

The chiropractic care of infants with colic: a systematic review of the literature

Explore (NY). (2011)

J.M. Saavedra *et al.*

Long-term consumption of infant formulas containing live probiotic bacteria: tolerance and safety

Am J Clin Nutr (2004)

J.M. Wiberg *et al.*

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)

J.E. Miller *et al.*

Efficacy of chiropractic manual therapy on infant colic: a pragmatic single-blind, randomized controlled trial

J Manipulative Physiol Ther (2012)

M. Browning *et al.*

Comparison of the short-term effects of chiropractic spinal manipulation and occipito-sacral decompression in the treatment of infant colic: a single-blinded, randomised, comparison trial

Clin Chiropr. (2008)

C. Hayden *et al.*

A preliminary assessment of the impact of cranial osteopathy for the relief of infantile colic

Complement Ther Clin Pract (2006)

M.M. Garrison *et al.*

Colic, child development, and poisoning prevention: a systematic review of interventions for infant colic

Pediatrics (2000)

B. Ferrer *et al.*

El cólico del lactante

Acta Pediatr Esp (2000)

P.L. Lucassen *et al.*

Systematic review of the occurrence of infantile colic in the community

Arch Dis Child (2001)

M.A. Wessel *et al.*

Paroxysmal fussing in infancy, sometimes called colic

Pediatrics (1954)



[View more references](#)

Cited by (18)

[Treatment of infant colic with craniosacral therapy. A randomized controlled trial](#)

2022, Complementary Therapies in Medicine

Citation Excerpt :

...In accordance with the sessions of craniosacral treatment that babies received, the experimental group was further divided in two subgroups: babies that received a maximum of 2 sessions, and babies that received a maximum of 3 sessions. The Craniosacral Therapy intervention included the following techniques as the most adapted for the babies with infant colic: balance of the pelvic, thoracic and clavicular diaphragms (transverse planes), hyoid release, decompression of the sacrum, release of the atlanto-occipital joint, occipital decompression, frontal lift, parietal lift, decompression of the sphenobasilar synchondrosis (SBS), decompression of the temporal bone, decompression of the temporomandibular joints and craniosacral balancing.^{26,27,35–37} CST sessions lasted from 30 to 40 min....

[Show abstract](#)

[Effectiveness of osteopathic manipulative treatment for pediatric conditions: A systematic review](#)

2022, Journal of Bodywork and Movement Therapies

Citation Excerpt :

...Only three of the 13 studies had low RoB (Brockmeyer *et al.*, 2009; Hasemann *et al.*, 2016; Philippi *et al.*, 2006): four were judged with unclear risk (Loehr and Treinies 2008; Hasler *et al.*, 2010; Niggemeier and Wilke 2005; Teichmueller, 2014), and five had high risk (Heinisch and Oberhuber 2008; Kimmerle 2014; Monaco *et al.*, 2008; Remmele and Weiss 2002; Ringeisen 2017), often downgraded due to lack of blinding of the outcome assessment (Table 4). Six studies investigated newborns and infants with visceral conditions (Castejón-Castejón *et al.*, 2019; Hayden and Mullinger 2006; Heber and Senger

2003; Kenter and Schmieder 2008; Nemett et al., 2008; Schepers 2017). These studies examined four different complaints, namely, infantile colic, dysfunctional voiding, regurgitation, and high bilirubin values....

[Show abstract](#) ✓

[Is foot reflexology effective in reducing colic symptoms in infants: A randomized placebo-controlled trial](#)

2021, Complementary Therapies in Medicine

[Show abstract](#) ✓

[The use and benefits of Craniosacral Therapy in primary health care: A prospective cohort study](#)

2021, Complementary Therapies in Medicine

Citation Excerpt :

...Three out of four patients did not report any adverse event. Mild, transient side effects of CST are correspond I to those reported by other trials and reviews.13,40,41 In patients with preexisting severe pathologies of the spine, the literature reported one serious adverse event.42...

[Show abstract](#) ✓

[Osteopathic Treatment for Gastrointestinal Disorders in Term and Preterm Infants: A Systematic Review and Meta-Analysis](#) ↗

2022, Healthcare (Switzerland)

[Osteopathic Manipulative Treatment for Pediatric Conditions: An Update of Systematic Review and Meta-Analysis](#) ↗

2022, Journal of Clinical Medicine



[View all citing articles on Scopus](#) ↗

☆ Sponsors: the present study does not have a sponsor and has not received any funding from any organization.

[View full text](#)

© 2019 Elsevier Ltd. All rights reserved.



ELSEVIER

All content on this site: Copyright © 2024 Elsevier B.V., its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the Creative Commons licensing terms apply.

