

Acupuncture for treatment of hospital-induced constipation in children: a retrospective case series study

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Abstract

Objective Acupuncture is a promising option in the treatment of functional bowel disorders. The aim of this study was to evaluate the feasibility and acceptance of acupuncture for the treatment of hospital-induced constipation (HIC) in children.

Methods Bilateral stimulation of acupuncture point LI11 was applied in 10 children with HIC using fixed indwelling acupuncture needles (0.9 mm long) before considering starting conventional local constipation therapy with laxative suppositories. The clinical records were studied retrospectively for feasibility, acceptance and effectiveness of acupuncture.

Results Acupuncture was feasible in all children and application of the indwelling needles was tolerated without fear. Side effects were not observed. After a median of 3 days of HIC, all children defaecated within 2 h after LI11 stimulation. No patient required conventional local constipation therapy.

Conclusions Acupuncture for the treatment of HIC is feasible and acceptable. Its effect should be verified in a randomised controlled trial.

spectrum of clinical conditions.⁵ Although the neurohumoral mechanisms of needling are clearly shown in experimental studies, the clinical application of acupuncture is limited to the prevention and treatment of nausea and vomiting after general anaesthesia, during chemotherapy and pregnancy and the adjunctive treatment of acute pain.^{6–9}

Acupuncture is a promising treatment for functional bowel disorders in adults and children.^{10–11} To date, acupuncture for constipation has only been used in paediatric patients with chronic constipation.¹² There are no trials evaluating acupuncture in acute hospital-induced constipation (HIC), which occurs in 10–20% of children during inpatient treatment of other diseases.¹³ We used acupuncture to treat HIC in children to evaluate the feasibility and acceptance of this treatment modality and to generate preliminary data for a subsequent randomised controlled trial.

METHODS

This was a retrospective case series investigation performed at the Department of Paediatrics of the University Medicine of Greifswald. The parents of children who developed HIC between November 2008 and February 2009 were invited to try acupuncture instead of standard therapy using laxative suppositories. HIC was defined as no stool within 72 h after hospital admission. We did not offer acupuncture to children who had clinical symptoms of an acute abdomen or massive coprostasis. The parents of all children agreed to have acupuncture performed on their children and gave their signed informed consent. The ethics committee of the University of Greifswald retrospectively approved the study design.

Fixed indwelling New Pyonex acupuncture needles (Seirin Corporation, Japan) with a diameter of 0.22 mm and a length of 0.9 mm (figure 1) were applied by a paediatrician licensed for acupuncture. The children were told that they were going to receive 'a sticker' to relieve their complaints and were shown the needle immediately before its application.

INTRODUCTION

Constipation is one of the most common digestive disorders of childhood, with 10–45% of children visiting paediatric gastroenterologists with constipation-related complaints.¹ The pathophysiology of childhood constipation can originate from a number of factors. The vast majority of patients do not have any inflammatory, anatomical, metabolic or neoplastic underlying causes and a diagnosis of functional constipation is made.² Functional constipation in childhood usually results in frequent absence from school, social isolation and feelings of depression.³ Common treatments for constipation are laxatives, enemas and other invasive procedures including manual removal of impacted faeces. Standard therapy is usually accompanied by unwanted side effects such as cramping, bloating, dehydration and faecal incontinence.⁴ Recent research has therefore focused on milder methods to treat constipation.

Acupuncture is one of the most frequently applied methods of complementary medicine in countries of the western world for a large

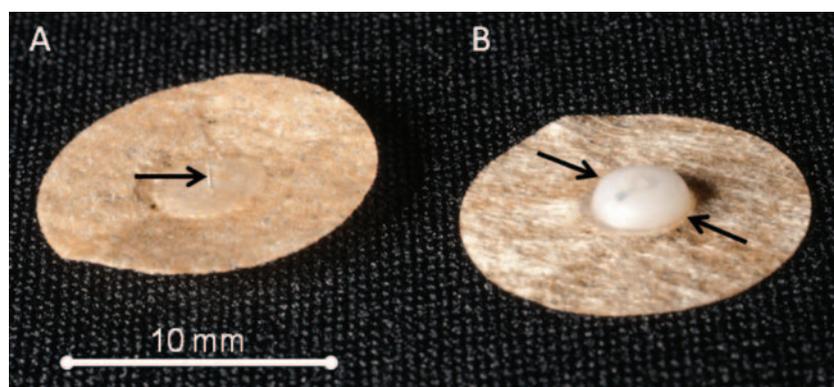


Figure 1 Fixed indwelling acupuncture needle New Pyonex (Seirin Corporation, Japan). (A) The needle embedded in adhesive skin-coloured material with diameter 0.22 mm and length 0.9 mm (arrow). (B) The needle in situ with a plastic hemisphere (between the two arrows), enhancing the effect of stimulation by massage.

The needles were applied unilaterally or bilaterally depending on the placement of intravenous lines to acupuncture point LI11 (*Qu Chi*). LI11 is located at the lateral end of the transverse cubital crease midway between LU5 (*Chi Ze*) and the lateral epicondyle of the humerus (figure 2). LI11 was chosen as the most frequently used point for constipation according to the recommendations published in text books on acupuncture.^{14 15}

Indwelling needles were left in situ until the production of a stool. Patients, parents and nurses were encouraged to perform needle stimulation by means of massage for 2–3 min twice an hour. If no stool had been produced 6 h after acupuncture, the child was given conventional laxative therapy using rectal suppositories. The time between acupuncture and defaecation was documented in patient charts, and parents and older children were asked about their opinion of the effectiveness of acupuncture as well as whether they would like to repeat this treatment in case of recurrence of constipation.

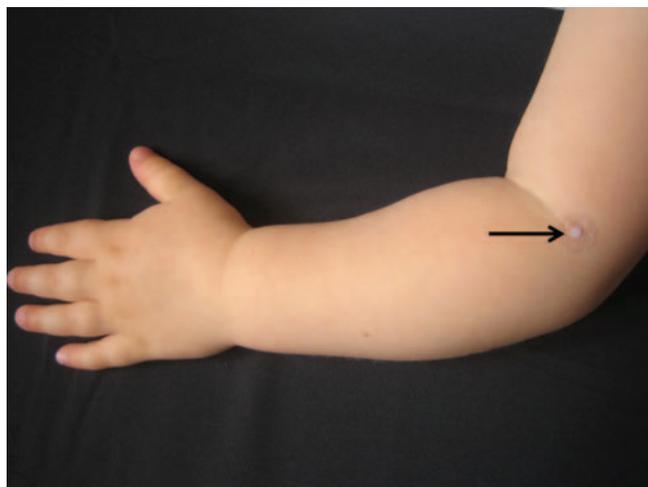


Figure 2 Location of acupuncture point LI11. The indwelling acupuncture needle in situ at LI11 (arrow). Acupuncture point LI11 is located in the depression of the lateral end of the transverse cubital crease when the elbow is flexed.

The data are presented in a descriptive manner using median and range where appropriate. The sample size calculation for a subsequent randomised controlled trial was performed using the incidence of defaecation after acupuncture as a primary endpoint.

RESULTS

Ten children (eight girls) of median age 5.5 years (range 0.5–15) with HIC received acupuncture of LI11. All of the children tolerated the insertion of the acupuncture needles well and none developed anxiety before needling. All children received acupuncture only once. No adverse effects during and after acupuncture were recorded. There were no skin complaints caused by acupuncture therapy with indwelling acupuncture needles. All children defaecated within 2 h after acupuncture (table 1) and no patient required conventional local constipation therapy.

Using the data from this investigation we calculated the sample size for a subsequent randomised controlled trial. Thirty-nine patients in each study group are required in order to detect a 30% difference in the incidence of defaecation between acupuncture and standard therapy groups with a power of 80% and $\alpha=0.05$.

DISCUSSION

The use of acupuncture for the treatment of HIC has been analysed for the first time in this retrospective study. We demonstrate that the procedure of insertion and stimulation of fixed indwelling acupuncture needles was well accepted by both children and their parents.

The stimulation of acupuncture point LI11 was associated with defaecation within 2 h of application in all patients without the need for administration of conservative local constipation therapy.

Acupuncture was shown to be a safe treatment modality in paediatric patients,¹⁶ although its application may be complicated by fear of needles in children.¹⁷ However, in our investigation none of the children reported fear of acupuncture needles. This observation is most likely associated with the design of the needles, which were

Table 1 Patient characteristics and clinical observations following acupuncture treatment

Patient number	Age (years)	Gender	Constipation since (days)	Time from acupuncture to defecation (h)	Parents' opinion*	
					Acupuncture helped?	Acupuncture again?
1	3.75	F	3	1	1	1
2	8	F	3	2	1	1
3	2.5	M	3	1.5	1	1
4	0.5	F	3	1	1	1
5	15	F	3	2	×	×
6	4.5	F	3	2	×	×
7	2.25	F	3	2	×	×
8	15	F	3	0.5	1	1
9	6.25	F	3	1	×	×
10	8.75	M	3	0.5	1	1

*0, no; 1, yes; ×, no reply.

originally created for auricular acupuncture. These needles resemble a small 'sticker' with a length of 0.9 mm, in contrast to the long standard acupuncture needles used for body acupuncture. Similar observations were reported in a survey of children with severe chronic pain in which the children described acupuncture treatment as pleasant and helpful.¹⁸ Acupuncture at LI11 is an easy, reproducible and safe intervention. In our pilot series there was no necessity for additional conservative local constipation therapies. Furthermore, we experienced a high acceptance rate compared with laxatives in the form of enemas or rectal tubes, especially in older children.

In a future randomised controlled investigation we aim to compare LI11 stimulation with a standard therapy regimen using conventional local constipation therapy. This type of design will allow an evaluation of the entire clinical effect of acupuncture including non-specific and specific physiological effects.¹⁹

CONCLUSION

Stimulation of acupuncture point LI11 using fixed indwelling needles of 0.9 mm length is safe, has a high acceptance rate and may be an effective and supportive therapy for HIC in children. This study provides important information for the design of an adequately powered randomised controlled trial.

Summary points

- ▶ 10 children had acupuncture for intercurrent constipation.
- ▶ All defaecated within 2 hours.

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and revision of the manuscript. TIU: design of study, analysis and interpretation of data, drafting and revision of the manuscript.

Competing interests None.

Patient consent Obtained.

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