

Observation on the clinical effect of pediatric massage combined with moxibustion in the treatment of children with diarrhea

Xiaohong Zhang^{1,a}, Weigang Wang^{2,b,*}

¹*Shaanxi University of Chinese Medicine, Xianyang, Shaanxi, 712046, China*

²*Affiliated Hospital of Shaanxi University of Chinese Medicine, Xianyang, Shaanxi, 712000, China*

^a1248336738@qq.com, ^b332062219@qq.com

**Corresponding author*

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Abstract: The purpose of this study is to explore the clinical effect of pediatric massage combined with Shenque acupoint moxibustion in the treatment of children with diarrhea. The study method was to collect 68 children with diarrhea who were admitted to the children's ward of our hospital from March to June 2023. According to the random number table method, the children were divided into a joint group (children's massage + Shenque moxibustion) and the control group (conventional treatment), each of 34 children in each group. The control group was treated with the conventional western medicine drug Montmorillonite powder. On the basis of the joint group, the children were treated with pediatric massage and Shenque acupoint moxibustion. Compared with the clinical symptoms of the two groups, the improvement time, treatment efficiency and treatment compliance. The results also showed that after treatment, the clinical symptoms of diarrhea in both groups improved, but the recovery time of stool in the combined group was 1.19 ± 0.43 days, the recovery time of abdominal pain was 1.25 ± 0.49 days, and the recovery time of vomiting was 2.00 ± 0.87 days, which was significantly lower than that of the control group ($P < 0.05$); the treatment efficiency was 94.12%, and the compliance rate was 100.00%, which was significantly higher than that of the control group ($P < 0.05$). Therefore, the treatment of children with diarrhea combined with Shenque acupoint moxibustion can control the child's condition in the short term, improve its clinical symptoms, optimize the treatment outcome, and improve the efficiency and compliance of children's treatment.

1. Introduction

Pediatric diarrhea is a common disease in pediatrics. This disease can be diseased in all seasons, but it mostly occurs in summer and autumn. Its etiology is complex, which is related to children's malnutrition, congenital diseases, overfeeding, sudden changes in climate, sudden changes in the nature of food, premature addition of fat or starchy foods, etc. [1] Changes in traits can be accompanied by fever, vomiting, abdominal pain and other symptoms, as well as different degrees of water, electrolyte, acid-base balance disorders [2]. At present, it is mainly symptomatic treatment,

using antibiotics, antiviral drugs and other types of intestinal infections to treat different types of intestinal infections, and treated with liquid therapy. Most oral drugs are mainly probiotics and montmorillonite powder [3-5]. However, due to the weak regulation function of children's viscera, the form is not full, and the resistance and tolerance to disease invasion and drug attack are low, the large number or long-term use of these drugs can easily lead to intestinal flora disorders, cause intestinal function disorders, and aggravate diarrhea. However, the digestive system of infants and young children is not fully mature, and the nerve regulation function is not perfect. If the respiratory tract infection is also easy to induce digestive tract disorders and cause diarrhea [6]. Pediatric massage is a special treatment method of traditional Chinese medicine. It stimulates the nerves and blood vessels on the surface of the body by kneading and touching the acupuncture points and meridians, and then regulates the neuroendocrine system of the human body through the nerve conduction pathway, so as to improve the nerve regulation function and gastrointestinal function, and promote intestinal per The advantages of obvious, convenient operation and no side effects are more and more valued by people. The moxibustion method has the effect of relieving pain, warming the meridians and dissipating cold. It has a certain safety and effectiveness for the treatment of diarrhea, and can also avoid the negative impact of drugs. Therefore, this study uses pediatric massage combined with moxibustion to treat children with diarrhea, and its curative effect is remarkable. It is reported as follows.

2. Information and methods

2.1. General information

68 pediatric diarrhea patients admitted to the children's ward of this hospital from March to June 2023 were selected. According to the random number table method, the children were divided into a joint group (children's massage+Shenque moxibustion) and the control group (routine treatment), with 34 children in each group. Among them, there were 19 male cases and 15 female cases in the combined group. They were 6 months to 4 years old, the average age (2.17 ± 0.65) years old, the course of the disease was 8 to 24 h, and the average (12.65 ± 2.68) h. The degree of dehydration was 22 cases were mild and 12 cases were moderate. In the observation group, there were 20 male cases and 14 female cases in the control group, aged 6 months to 3.5 years old, average age (2.05 ± 0.76) years old, the course of the disease was 9-23 h, the average (12.07 ± 2.154) h, and the degree of dehydration: 21 cases were mild and 12 cases were moderate. There is no significant difference in the general data of the two groups of children ($P > 0.05$), which is comparable. Inclusion criteria: (1) Children with pediatric diarrhea, which does not belong to severe diarrhoea, are in conformity with the diagnosis criteria; (2) children with pneumonia are examined pathologically for non-rotatic viruses and bacteria causing the disease; (3) children with medical history and test data are complete; (4) children who participated in this study were not relevant treated; (5) children with no acute infectious diseases, fractures and other contraindications; and (6) children with parents' informed consent.

2.2. Intervention methods

(1) Control group: give routine treatment to the child. Oral smidamond tripe (produced by Bofu-Yipusheng Pharmaceutical Co., Ltd., Chinese medicine standard H20000690, specification: 3g), take it with warm boiled water, <1 bag a day, take it in 3 times, 1 hour before feeding; 1 year old to 2 years old, 1 to 2 bags a day, take it 3 times, half Use; take 2 to 3 bags a day for people over 2 years old, divided into 3 times, half an hour before meals. When taking it, mix it with warm boiled water and take it immediately. Children with acute diarrhea should double the dose when taking it

for the first time. (2) The doctor held the left hand of the patient's left hand, thumb in the middle of the right hand, pushed the large intestine, pushing the spleen, rubbing the abdomen, grinding to help moisturize, adjust the stomach; pushed up the bone of the seven and grinding the tail of the turtle to adjust to stop diarrhoea; in the chamber rumors to regulate the gas. Specific methods are[6]:1) the doctor with thumb in the abdomen, from between the fingers to the root, the time is 3min, this is to replenish the spleen. 2) the doctor pushes up the child's colon, time is 3, this is for the colon. 3) the doctor uses the thumb's belly, in a rotating way pushes the patient's kidney. The time is 2min, it is for supplementing the kidney. 4) the doctor clockwise pushes from the canopy to the mouth, the time is 3 min. This is for inward gossip. 5) the doctor points on the sky hole, the middle cavity, the divine cavity of the lobe, in total 5 min. That is the belly point hole. The doctor with the reverse needle in the direction of the infant's stomach. The time is 5min, for this belly. 6) the doctor struggles with the infant turtle tail, from the top to the bottom to the seven bone, and finally from the bottom up to the upper spleen, time of 5 min for this, to rub the tail tail and push up the seven bones. This is to knead the tail and push up the seven bones. Shenque moxibustion: After the children's massage, ignite the moxibustion line back to the moxibustion at a height of 2 to 3 cm from the Shenque point, move the moxibustion strip left and right, the treatment time is 10 to 15 min, with skin warmth and flushing, the treatment time is 1 time/d., insist on treatment for 5 days.

2.3. Observation indicators

Observe and analyze the improvement time, treatment efficiency and treatment compliance of the clinical symptoms of the two groups of children. Clinical symptoms mainly include vomiting, fever, abdominal pain, abnormal defecation, etc. (1) The evaluation standard of treatment effect is that after treatment [7], the routine examination of the child's stool is normal, the pathogenic examination is negative, the water electrolyte balance, the acid-base balance, and the clinical symptoms basically disappear as a recovery; after treatment, the routine examination of the child's stool is basically normal, the stool characteristics are basically restored, Improvement of symptoms is regarded as improvement; after treatment, the routine examination of the child's stool has not changed or deteriorated, and the clinical symptoms and the number of defecations without improvement or aggravation are regarded as ineffective. (2) Children's treatment compliance: The self-made compliance scale is used for evaluation. <60 points are not compliance, 60 to 79 points are in order, and >80 points are divided into compliance. The higher the score, the better the children's treatment compliance.

2.4. Statistical analysis

The statistical software SPSS 27.0 is used to analyze and process the collected data. The measurement data such as the recovery time of clinical symptoms of the two groups of children are expressed in ($\bar{x} \pm s$), and the t test is used; the treatment compliance, treatment efficiency and other counting data of the two groups of children (%) use chi-square test, with $P < 0.05$ indicates that the difference is statistically significant.

3. Data results

3.1 Comparison of the recovery time of clinical symptoms of children with diarrhea in the two groups

The recovery time of clinical symptoms such as stool, abdominal pain and vomiting in the two groups has been improved, but the recovery time of the joint group is shorter than that of the control

group, and the difference is statistically significant ($P < 0.05$). See Table 1 for details.

Table 1: Comparison of the recovery time of clinical symptoms in the two groups of children with diarrhea [(x ±s), d]

Group	Recovery time of stool	Abdominal pain recovery time	Vomiting recovery time
Control group (n=34)	2.57±0.81	2.57±0.68	5.36±1.23
Joint group (n=34)	1.19±0.43	1.25±0.49	2.00±0.87
t	10.103	10.300	12.461
P	<0.001	<0.001	<0.001

3.2 Comparison of the efficiency of the treatment of children with diarrhea in the two groups

It can be seen from Table 2 that 17 cases of children in the control group have improved, 8 cases have recovered, and the treatment efficiency is 73.53%. The children in the Lianhe group have improved 17 cases, 15 cases have recovered, and only 2 cases have not been ineffective. The treatment efficiency is 94.12%. The treatment efficiency of the combined group is significantly higher than that .05). See Table 2.

Table 2: Efficiency analysis of the treatment of children with diarrhea in two groups [n(%)]

Group	Be invalid (%)	Take a turn for the better (%)	Be completely recovered (%)	Efficiency (%)
Control group (n=34)	9(26.47)	17(50.00)	8(23.53)	25(73.53)
Joint group (n=34)	2(5.88)	17(50.00)	15(44.12)	32(94.12)
χ^2	/	/	/	9.776
P	/	/	/	<0.001

3.3. Comparison of treatment compliance between the two groups of children with diarrhea

It can be seen from Table 3 that 6 children in the control group did not follow, while the joint group did not follow 0 cases and followed 15 cases, which was higher than the number of follow-up cases in the control group; the total compliance rate of the control group was 82.85%, the joint group was 100.00%, and the joint group was significantly higher than the control group See Table 3.

Table 3: Treatment compliance analysis of two groups of children with diarrhea [n(%)]

Group	Disobey (%)	More obedience (%)	Comply with (%)	Total compliance rate (%)
Control group (n=34)	6(17.65)	18(52.94)	10(29.41)	28(82.85)
Joint group (n=34)	0(0.00)	19(55.88)	15(44.11)	34(100.00)
χ^2	/	/	/	7.776
P	/	/	/	0.006

4. Discussions

4.1. The etiology and pathogenesis of diarrhea in children

Pediatric diarrhea is caused by many factors and many pathogens, which is one of the common diseases in children. According to the survey, the number of children with diarrhea under the age of 5 in China every year is about 209 million, accounting for as much as 25% of the national diarrhea patients [8]. Studies have also shown that the younger the children are, the higher the incidence of diarrhea. Modern medicine divides it into infectious diarrhea and non-infectious diarrhea. Non-infectious diarrhea is caused by improper feeding, allergy, primary or secondary disaccharide enzyme deficiency or reduced activity, abdominal cold, digestive disorders and other factors. Infectious diarrhea is caused by bacteria, viruses, fungi and parasites. It is believed that infectious diarrhea is a common cause of diarrhea in children. Among them, rotavirus infection is the main pathogen of infectious diarrhea in children, followed by enteradenovirus, while astrovirus and norovirus infection are still prevalent [9]. Therefore, its treatment methods are mainly rehydration treatment and diet treatment, but some scholars believe that chronic diarrhea and persistent diarrhea are often complex, accompanied by multiple complications, so it is necessary to take comprehensive treatment measures. Traditional Chinese medicine believes that children's viscera are delicate and the shape is not full, which is the body of childish yin and yang. Wind, cold, dampness and heat can lead to the abnormal lifting function of children's spleen and stomach, thus causing children's diarrhea. Among them, wet evil is the most common. In addition, children's diarrhea is closely related to diet and daily life [10,11]. On the other hand, if the spleen is weak, or the disease is prolonged for a long time, the weakness of the spleen and stomach is easy to cause diarrhea. Spleen deficiency causes diarrhea, which is easy to hurt temper and spleen yang. Over time, the spleen will damage the kidney, resulting in more serious spleen and kidney yang deficiency and diarrhea. Spleen deficiency and dampness is the main pathogenesis of diarrhea, and the basic principle of treatment is to transport spleen and dehumidification.

4.2. Characteristics of massage in the treatment of children's diarrhea

Pediatric massage has unique advantages in the treatment of children's diarrhea. Experienced pediatricians can use pediatric massage to treat children to achieve the effect of diarrhea. Pediatric massage treatment of children with diarrhea mainly reflects the syndrome differentiation and overall view of traditional Chinese medicine. Therefore, the blood qi and bones of the children are not completely stable, and the organs are weak. Traditional Chinese medicine decoction treatment is difficult. The implementation of massage therapy requires the method to be applied to children. By stimulating the corresponding acupuncture points, the goal of regulating essence and qi can be achieved. It can activate and mobilize the body to improve the environment of the human body and achieve the balance between yin and yang balance between the organs and tissues, and harmony between human beings and nature. Moreover, by adjusting the five organs and six meridians Massage acupoints mainly include the abdomen, back and upper limbs, which convey the whole body. Zhi Xiaojing [12] was massaged for 102 children with non-severe diarrhea according to syndrome differentiation. As a result, 89 cases were cured and 8 cases improved, with an effective rate of 95.0%. Zhu Kunfu [13] added pediatric massage to 50 children with diarrhea on the basis of routine treatment. The results showed that the cure rate and compliance of children in the observation group were significantly higher than that of the control group ($P < 0.05$). Wang Jing [14] For 50 children with mild and medium-sized diarrhea, 41 cases were cured by nourishing the spleen, pushing the slab door to the horizontal lines, smooth gossip, smooth abdomen, and rubbing three miles combined with syndrome differentiation and typing. Dai Junru and others [15] selected

acupoints such as spleen meridian, Dumai, large intestine meridian, appendix, Shenque, glans tail, foot three miles, spine and other acupuncture to treat 40 children with diarrhea. After treatment, 24 cases were effective, 16 cases were effective, and the total effective rate was 100%.

4.3. Pediatric massage combined with moxibustion to treat diarrhea

Traditional Chinese medicine moxibustion therapy is characterized by stimulating meridians and collaterals and regulating the functions of the viscera. It has the functions of clearing collaterals and dissipating cold, promoting blood circulation and paralysis, relieving blood stasis and dissipating knots, and solidifying the yang [16]. Combined with the characteristics of children with diarrhea, syndrome differentiation and acupoint selection can play the role of nourishing deficiency, dissipating cold and warming yang. Relevant studies have pointed out that [17] acupoint moxibustion can promote blood circulation, accelerate metabolism, improve immunity and disease defense, and improve a variety of diseases. In moxibustion, Shenque, Tianshu, Guanyuan, Zusanli and other acupuncture points are selected. Among them, the efficacy of Shenque includes gastrointestinal conditioning, Shengyang trap, Peiyuan solidification. It is compatible with Zusanli, which can play the effect of gastrointestinal conditioning. The efficacy of Tianshu includes regulating qi and digestion, regulating the intestines and stomach, moxibustion on Tianshu, which can regulate the intestinal organs, and can be used to treat related diseases caused by intestinal dysfunction. Combined with Zusanli, it can play a role in and stop diarrhea. The effect of treating children's diarrhea is relatively obvious. The effects of Guanyuan acupoint include Peiyuan tonifying qi, conditioning and nourishing the kidney and strengthening yang. Combined with Tianshu, it has an obvious effect on abdominal distension, intestinal tinnitus and diarrhea.

4.4. Pediatric massage combined with moxibustion to treat diarrhea

The results of this study show that pediatric massage combined with moxibustion can significantly improve the clinical symptoms of children. Compared with traditional Western medicine treatment, it can improve the efficiency of clinical treatment and the compliance rate of treatment. The difference is statistically significant ($P < 0.05$), which is basically consistent with the research results of other scholars in China [6,18]. In this study, the main method of tonic is used for massage. Among them, tonifying the spleen meridian and kneading the board door can improve the child's qi machine, which has the effect of strengthening the spleen and stopping diarrhea; tonifying the large intestine is the symptomatic therapy; the kidney is the innate foundation Li Fang [19] compared pediatric massage combined with Shenque moxibustion with conventional western medicine treatment. The results showed that the total efficiency of the observation group after one week of treatment was 96.0%. Cui Xiuli [20] treated 100 patients with moxibustion combined with massage and montmorillonite powder. After 3 days of treatment, it was found that the clinical symptom improvement time of the observation group was shorter than that of the control group ($P < 0.05$). The theory, technique and acupoint of pediatric massage are significantly different from its application in adult departments. The acupoints have the characteristics of points, lines and surfaces and have specific acupoints [21]. In childhood, the palm and forearm meridians are more abundant, and the qi of children's pure yang bodies makes the meridian easy. Therefore, the selection of children's specific acupuncture points is more sensitive to the feeling of external stimuli, such as techniques, and it is easy to receive and transmit this treatment information to the relevant organs of the body, so as to play a role in curing and preventing diseases. Moxibustion uses warmth and drug effects to adjust the physiological function of human disorders by stimulating the activity of meridian qi and adjusting the temperature transfer of acupuncture points and the surrounding meridians. As the local temperature rises, it promotes local blood circulation, so as to achieve the

purpose of disease prevention and treatment [22,23]. Moxibustion is suitable for children's diarrhea deficiency syndrome and cold syndrome, not for empirical and thermal syndrome. Moxibustion is simple to operate, the treatment cost is low, and the curative effect is accurate. And moxibustion can avoid adverse reactions caused by oral drugs. Relevant studies also pointed out [18], pediatric massage combined with moxibustion method of treatment of children with diarrhoea, so that their serum levels of IgA, IgG, IgM levels of improvement are better than the traditional treatment, which may be attributed to: moxibustion plays a role in regulating qi and blood and warming the meridians and dispersal of cold, and qi and blood, as a basis for the activities of the whole organism, can lead to the meridians and collaterals, internal organs and organs, so that serum immunoglobulin levels have been improved, which is conducive to the improvement of clinical symptoms, thus ensuring the organism is healthy enough. It helps to improve clinical symptoms, thus guaranteeing the health of the organism. Pediatric massage can promote the smooth operation of qi and blood, play the role of regulating qi and blood, and improve the transport function of the spleen and stomach by stimulating the local acupoints of the body.

5. Summary

Massage is one of the commonly used external treatment methods in traditional Chinese medicine. By stimulating acupoints, it can promote qi and blood circulation, dredge meridians, regulate viscera, and balance yin and yang. In clinical application, dialectical massage techniques can be used alone to obtain significant curative effects, but can also be combined with traditional Chinese medicine prescriptions, patches and moxibustion to optimize the treatment effect. At present, most of the research on this treatment is mainly clinical observation. There is a lack of research on the mechanism of action of specific acupuncture points in children, and the sample size of various clinical treatment studies is too small. At the same time, the massage technique lacks a unified standard operating process and efficacy determination standard, especially the amount, frequency and time standard of opposal stimulation. Therefore, a number of hospitals have been combined to expand the sample size, formulate relevant operating standard standards and efficacy determination standards, and further verify the effect of massage treatment combined with moxibustion in the treatment of pediatric diarrhea.

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