Clinical study on umbilical application of honey processed Scallion white paste in the treatment of infant abdominal distension

ABSTRACT

Objective: To observe the therapeutic effect of honey processed scallion white paste on umbilicus in the treatment of infant abdominal distension.

Methods: Between January 2012 and December 2021, 3120 cases of hospitalized children with abdominal distention, randomly divided into two groups, control group 1560 cases, adopt Ding Gui umbilical sticking therapy, cooperate to fight infection, digestion, protect the intestinal mucosa, maintaining the normal flora, phlegm, phlegm, oxygen, antifebrile, rehydration, anal exhaust, potassium, abdominal massage, foot

three mile closed and symptomatic treatment. In the treatment group, 1560 cases were treated with the umbilical application of honey processed scallion white paste, and the treatment was the same as the control group.

Results: Before and after treatment, the clinical performance scores of the two groups were compared, $P < 0.05$. After treatment, the improvement of syndrome scores of the treatment group was significantly better than that of the control group ($P < 0.05$). The total effective rate of the treatment group was higher than that of the control group ($P < 0.05$). The average disappearance time of abdominal distension and the average length of hospital stay in the treatment group were significantly shorter than those in the control group ($P < 0.05$).

Conclusion: The treatment of abdominal distension in children with honey processed onion white paste is effective, and the method has the characteristics of convenient operation and low price, which is worthy of clinical application.

Keywords:abdominal distension in children; Worship cream; Umbilical application therapy; Clinical research

Introduction

Abdominal distension is a common clinical symptom in children, especially in small infants. It can be seen in children with simple dyspepsia, gastroenteritis, postoperative and late stage of bronchitis, pneumonia, and various antibiotics treatment [1]. Light can appear paroxysmal crying, restless, irritable, poor appetite disease; Severe cases can appear shortness of breath, dyspnea, and even mental malaise and other diseases, serious cases often appear serious poisoning symptoms, and even coma, endangering

children's lives. It is generally difficult for infants to take oral drugs, especially for infants less than 1 year old who often suffer from choking and suffocation. From January 2012 to December 2021, the author treated abdominal distension in children by umbilical application of honey processed green onion paste, and achieved satisfactory results. The results are reported as follows.

1. Clinical Data

1.1General information

A total of 3120 patients hospitalized from January 2012 to December 2021 in pediatric department with different abdominal distension were selected. According to the order of admission, the children were divided into 2 groups according to the random number table method. The total number of patients in the treatment group was 1560, including 869 males and 691 females. The average age was 7.5±4.5 months (range, 3 months to 1 year). The course of disease ranges from 2 to 9 days. In the control group, there were 1560 cases, including 889 males and 671 females. The average age was 8.2±3.8 months (range, 4 months to 1 year). The course of disease ranges from 2 to 9 days. There was no significant difference in gender, age and mean course of disease between the two groups ($P > 0.05$).

1.2 Methods

① Basic treatment: the hospitalized children were routinely carried out anti-infection, digestive aid, intestinal mucosal protection, maintenance of normal intestinal flora, phlegm, sputum discharge, oxygen, antipyretic, fluid replacement, anal exhaust,

potassium, abdominal massage, Zusanli acupoint closure and symptomatic treatment; (2) Umbilical application therapy: the treatment group was treated with honey processed scalewhite paste for umbilical application. The preparation method was as follows: a total of 3 strips of scalewhite 3 ~ 5cm, which were cut and mashed, and 20 grams of honey were added and mixed to prepare for use. Operation method: Take appropriate amount of scallion paste, wrap with gauze, apply the umbilical cord, cover the umbilical cord with dressing paste, and fix it. The above-mentioned creams were applied 6 to 8 times for children less than 3 months old, 4 to 6 times for children 3 to 6 months old, and 2 to 4 times for children 6 to 12 months old. The creams were changed every 12 hours. In the control group, Ding Guier umbilical patch (purchased from the pharmacy of the affiliated Hospital of Shangluo Vocational and Technical College, produced by Shanxi Yabao Pharmaceutical Group Co., LTD., approved by B20020882) was applied to the umbilical cord, 1 patch at a time, and replaced once every 24 hours.

1. 3 Observational items

① Scores of TCM symptoms in the two groups before and after treatment: The scores of TCM symptoms were evaluated by the symptom score method [2]. The scores were recorded as 2, 4, 6 and 0 points according to the mild, moderate, severe and normal symptoms.

② Clinical efficacy: Efficacy evaluation criteria were formulated according to the degree of abdominal distension, bowel sounds and appetite [3]. Cure: abdominal distension disappeared after 2 times of application, bowel sounds were normal, appetite

was normal; Significant effect: abdominal distension was significantly reduced after 2 to 4 times of application, bowel sounds were normal, appetite was close to normal; Effective: After 4 times of application, abdominal distension was slightly reduced, bowel sounds were weak, appetite was slightly improved; Ineffective: After more than 6 times of application, abdominal distension was not significantly relieved, bowel sounds were weak, and appetite was not significantly improved.

③ Comparison of the average disappearance time of abdominal distension and the average length of hospital stay between the two groups: The average disappearance time of abdominal distension and the average length of hospital stay were observed and compared between the two groups.

1. 4 Statistical methods

SPASS13.0 statistical software was used for calculation, measurement data were expressed as X ±s, and independent sample t-test was used for comparison. Chi-square test was used to compare count data. $P < 0.05$ was considered statistically significant.

2.Result

2.1 Scores of TCM symptoms of the two groups before and after treatment: see Table 1.

Table 1 Comparison of TCM symptom scores between the two groups before and after treatment (X ±s)

Type of Group	Number of case	Before treat	after treat	total improve rate (%)
Treatment group	1560	24.26±8.41	7.23±6.96①②	66.46±22.11②

Control group	1560	24.91±8.68	9.47±7.52①	56.42±23.34

Note: ① Compared with before treatment, $P < 0.05$; ② Compared with the control group, $P < 0.05$.

According to the statistical analysis, the clinical performance scores of the two groups before and after treatment were compared, $P < 0.05$, there was a statistical difference; After treatment, the improvement of syndrome score in the treatment group was significantly better than that in the control group ($P < 0.05$). The total improvement rate of TCM clinical manifestations between the treatment group and the control group was compared, $P < 0.05$, and the treatment effect of the treatment group was significantly higher than that of the control group.

2.2 Comparison of clinical efficacy between the two groups: see Table 2.

Table 2 Comparison of clinical efficacy between the two groups

Type	Grp No.	Case	Cure	Significa	effective	Effective	invalid	Total effective (rate)
Treat group								
	1560	839	419	157	145	1415（90.7%）①		
Control group	1560	611	303	337	309	1251（80.2%）		

Note: ① Compared with the control group, $P < 0.05$.

According to the statistical analysis, the total effective rate of the two groups was compared, $P < 0.05$, indicating that the total effective rate of the treatment group was significantly better than that of the control group.

2.3 Comparison of the disappearance time of abdominal distension and the average length of hospital stay between the two groups: see Table 3.

Table 3 Comparison of average disappearance time of abdominal distension and average length of hospital stay between the two groups (X ±s)

Type Grp	No.Cas	Mean day disappear abdom distens	average length hospital stay
Treatt group			
	1560	3.5±0.8d①	4.2±0.3d①
Control group	1560	5.3±1.2d	6.4±0.6d

Note: ① Compared with the control group, $P < 0.05$.

According to the statistical analysis, the average disappearance time of abdominal distension and the average length of hospital stay in the two groups were compared, $P < 0.05$, indicating that the average disappearance time of abdominal distension and the average length of hospital stay in the treatment group were significantly shorter than those in the control group.

3 .Discussion

Abdominal distension is a common clinical symptom in pediatrics. Under normal circumstances, children over 2 years old and adults have no gas in the small intestine except the stomach and colon. Neonates should be aerated normally in the small intestine, and no gas accumulation is mostly a pathological phenomenon. Especially after full abdominal expansion, often higher than xiphoid process, hunger is empty

stomach, if the continuous expansion is not deflated, and tension can be considered abdominal distension. Children with acute or chronic appearance, abdominal heave higher than the chest, severe abdominal distension can affect breathing, can not lie flat. Abdominal examination: tap the abdomen, drum sounds are gas, solid sounds are solid masses, solid sounds with conductive tremor are fluid accumulation, abdominal auscultation of mechanical ileus, intestinal sounds are hyperactive, paralytic ileus is reduced or disappeared. There are also two kinds of flatulence, generally gastrointestinal flatulence, but there are a few pneumoperitoneum. In these two cases, in addition to the examination of subphrenic gas by vertical X-ray, the abdominal light and shallow patting can feel the empty soft pneumoperitoneum, and the intestinal flatulence can be felt. Older children can rely on the left side of the decubitus, percussion to identify the liver voiced boundary, pneumoperitoneum when the liver voiced boundary disappeared.

The cause of abdominal distension in children is complex. In pediatric clinic, it is generally believed that the causes of abdominal distension in children are divided into three categories :(1) gastrointestinal gas accumulation; (2) ascites, pneumoperitoneum, abdominal infection; (3) Abdominal mass and tumor. The latter two are mostly in the field of pediatric surgery. For gastrointestinal gas caused by abdominal distension in children, and divided into two kinds of internal medicine and surgery. The focus of this paper is on children with medical abdominal distension caused by gastrointestinal gas accumulation. The causes of internal abdominal distension in children caused by gastrointestinal gas accumulation are: (1) physiological gas accumulation: the

gastrointestinal tract gradually inflates after birth, which is clinically manifested as a certain degree of abdominal distension, and the gas gradually decreases with the increase of age, and the abdominal distension disappears. This condition is not treated, but should be differentiated from other conditions. (2) Improper feeding: due to improper feeding, abdominal distension in children, pay attention to appropriate control of diet, generally can be relieved. (3) Crying and swallowing gas: newborns and small infants often cry, resulting in abdominal distension when swallowing a large amount of gas. The degree of abdominal distension is related to the degree of crying. (4) Constipation: constipation is one of the most common clinical cases in children. Constipation can be caused by a variety of factors, including organic and non-organic factors, while non-organic factors are the most common. Severe constipation is accompanied by obvious abdominal distension. (5) Dyspepsia: Dyspepsia is one of the most common digestive system diseases in newborns and infants. It is caused by immature digestive function, lack of certain substances in the body or improper feeding. The abdominal distension caused by this condition is second only to gastrointestinal infection and extra-gastrointestinal infection in this clinical case. (6) Gastrointestinal infection: Gastrointestinal infection is a common digestive system disease in children, which is one of the most common causes of abdominal distension in children. (7) Gastrointestinal infections: gastrointestinal infections in infants and young children, such as bronchitis and pneumonia, are often complicated with abdominal distension and other digestive dysfunction, which is also the most common cause of abdominal distension in children. The mechanism of abdominal distension in

gastrointestinal infection and extra-gastrointestinal infection may be as follows: (1) the toxin produced by bacteria inhibits the nervous system, leading to toxic intestinal paralysis; ② Severe infection causes systemic inflammatory response syndrome, inflammatory mediators out of control, resulting in intestinal microcirculation disorders; ③ Pathogenic microorganisms lead to the disorder of normal bacteria in the intestinal lumen and the destruction of intestinal barrier; ④ When abdominal distension is obvious, intestinal wall compression, gastrointestinal blood circulation and digestive dysfunction also aggravate abdominal distension [4]. In this clinical case, gastrointestinal infection and gastrointestinal infection caused abdominal distension in children accounted for the largest proportion.

Chinese medicine believes that children are young Yin Yang body, delicate viscera, body is not filled, spleen is often insufficient, meridians are not sheng, easy to be trapped by internal and external factors. Six Fu organs to pass for shun, meridians to chang for use [5]. The abdomen is passed by the Foot Yangming stomach meridian and foot Taiyin spleen meridian, and cold and evil attack on the meridians, or the stomach is injured by milk and food, the absence of Central Yang, wet and evil trapping, etc., can cause Qi block, weak meridians, and incoagulation without causing abdominal distension.

Scallion is the bulb near the root of the liliaceae. There are planting in all parts of our country and it can be adopted at any time. After mining, cut fibrous roots and leaves, peel off the outer membrane, fresh use. The taste is hot and the sex is warm. It has the effect of sweating and relieving the surface and connecting Yang Qi. It is

mainly used to treat the carbuncle of ulcer externally, flavone in the viscera, viscera in the viscera, flavone in the viscera, flavone in the viscera. "Compendium of Materia Medica" : "Spring onion, the disease that treats, belong to Taiyin, Yangming more, all take the function of its divergent ventilation. Ventilation can detoxify and reason blood disease. Gas, blood handsome also, gas is blood live. Jin Chuang upon loss, broken blood, pain, more than the king 嵺101 party with scallion, sugar thirds research of seal, cloud state, pain more non-trace scar. Green onion leaves can also be used. And blow salt into the jade stem to cure bladder failure and transfer the critical bladder to the casing. More than commonly used, treat several people to test." [6] The scallion white flavor is acrid and warm, returning to the lung and stomach meridian. It has the functions of sweating and relieving the surface, dispersing cold and Tongyang, detoxifying and dispersing knot, and releasing the milk under collaterals. It also has the effect of dispersing cold and Tongyang, warming meridian and Tongluo. Honey sweet flat, lung, spleen, large intestine meridian, can be used to fill, moisten dryness, analgesia, detoxification, external use can have anti-inflammatory, promote wound healing and other effects. Two together, not only has wenpi gasification stagnation, xiaoshi, cold diarrhea turbidity, make the intestinal function to reply as soon as possible, the pediatric abdominal distension the more speed, and can make the honey restricted worship of spicy stimulation to the skin, its formula is rigorous, the compatibility of the exact, based on the easy, the curative effect of the ordinary, is dispelling the are, for ideas and not evil, that make for use, bring out the best in each other.

At present, there are many researches on shallots in China. A large number of studies have shown that the active components of shallots extract contain volatile oil, flavonoids, steroid saponins, unsaturated fatty acids and other components. Among them, volatile oil mainly contains volatile sulfide, which has anti-inflammatory, anti-allergic, anti-microbial, anti-mutation, anti-cancer, insect repellent, enzyme inhibition, central nervous system, respiratory system and so on [7].Flavonoids are one of the important components of scallion. Most of the known flavonoids in allium have phenolic hydroxyl structure, which is considered to be a good antioxidant. It has anti-infection, anti-aging, anti-tumor, anti-atherosclerosis, anti-myocardial ischemia, scavenging free radicals and other effects. Steroidal saponins are also one of the important active components of shallots, which have potential preventive and therapeutic effects on cardiovascular diseases and tumor diseases. At present, THE biological activities OF natural steroid saponins and their clinical applications are mainly focused on the aspects of lowering blood lipids, anticancer, cardiovascular system conditioning and immune regulation. The unsaturated fatty acids in onion white are essential fatty acids for human body, which have the functions of regulating blood lipids, clearing thrombus, immune regulation, maintaining retina and improving vision, improving arthritis symptoms and alleviating pain, reinforcing brain and so on. Similarly, foreign studies on Scallion have also found that scallion has the effects of lowering blood lipids, blood pressure, anti-atherosclerosis, anti-lipid peroxidation damage, improving the release of NO and inhibiting the release of Ang ii, which has proved the role of scallion [8]. According to modern studies, the pharmacological effects

of Scallion can be summarized as follows: ① dilate blood vessels and improve microcirculation [9]; ② Regulating dyslipidemia [10]; ③ Antiplatelet aggregation [11]; ④ promote endothelialization after vascular injury [12]; ⑤ Anti-proliferation and migration of smooth muscle cells [13]; ⑥ Anti-inflammatory reaction [14]. In this clinical study, a large number of cases have proved that honey processed scallion white paste is effective in treating abdominal distension in children. It is speculated that its mechanism of action mainly plays the role of scallion white in vasodilating, improving microcirculation, anti-proliferation of smooth muscle cells and anti-inflammation.

At present, the conventional treatment of pediatric diarrhea in Western medicine mainly adopts symptomatic treatment such as active anti-infection, maintenance of water and electrolyte balance, regulation of intestinal flora, improvement of intestinal microcirculation, gastrointestinal decompression, anal exhaust and so on. However, children with long course of disease and severe symptoms often have unsatisfactory curative effect and many side effects, which are difficult to be accepted by children and their families. And oral Chinese medicine treatment, children take medicine is very difficult, it is difficult to play its due effect. Therefore, the application of honey processed scallion white paste on umbilical cord in the treatment of infant abdominal distension has the advantages of simple use and reliable effect.

Umbilical compress therapy is one of the traditional Chinese medicine external treatment methods. It has the characteristics of non-invasive non-toxic, unique curative effect, economical and practical and easy to operate. Especially in pediatrics can best play its characteristics and get a wide range of applications. For example, Tang

Liangwei [15] used Huoxiang Zhengqi mixture to apply the umbilical cord and massage to treat pediatric diarrhea, with a total effective rate of 94.7%. He Ying [16] treated 92 children with diarrhea by applying diarrhea patch (composed of menthol, clove basil oil, polymer materials, etc.) to Shenque point, with a total effective rate of 95.65%. Drug was chosen time, because the umbilical in the process of embryonic development, for abdominal wall closure at the latest, subcutaneous adipose tissue, umbilical there is rich in blood vessels and lymphatic vessels and nerves in great quantities, so the permeability is strong, the drug molecules more easily through the navel skin stratum corneum into mesenchymal cells, quickly diffuse into the blood around the body, so its penetration of drugs dispersion effect is stronger than other parts. According to traditional Chinese medicine, umbilical cord is the god of Ren pulse, Ren pulse is one of the eight veins of Qi meridian, running through the twelve meridians, is the general pivot of meridians, Qi through 100 veins, covering the five zang and six Fu organs. A famous doctor in the period of the Republic of China, said, "Fresh scallion is white. Light use two or three scallions, heavy to five. The soft one is the best. Its strong person is called Hu Cong, air turbidity is thin, not as good as soft. To green with white, take its light; Or even the need to use it, to connect all the pulse." In conclusion, the application of scallion on the umbilical cord not only enhances its permeability, is easy to be absorbed and utilized by the body, but also can give full play to the role of scallion in warming Yang Qi.

The results of this study showed that there were statistically significant differences in clinical performance scores between the two groups before and after treatment ($P <$

0.05), and the improvement of syndrome scores in the treatment group was significantly better than that in the control group after treatment ($P < 0.05$). The total effective rate of the treatment group was higher than that of the control group ($P < 0.05$). The average disappearance time of abdominal distension and the average length of hospital stay in the treatment group were significantly shorter than those in the control group ($P < 0.05$). It can be seen that the application of honey processed scallion white paste on umbilicus in the treatment of abdominal distension in children is remarkable. At the same time, the method has the characteristics of quick effect, short course of treatment, simple, safe, no adverse reaction, low price, abundant drug source, effective, simple and easy to operate. It is easy for most children to accept, and it is a good choice for the treatment of abdominal distension in children.

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