

## Clinical Effect of Waist and Back Elbow Tip Pressing Method in the Treatment of Acute Renal Colic

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**Abstract:** To observe the clinical effect of "special acupoints of traditional Chinese medicine" elbow tip pressing therapy for renal colic, we divided 80 patients with renal colic into two groups by randomized single-blinded method. The observation group, comprising 40 cases, received treatment with "special acupoints of traditional Chinese medicine" elbow tip pressing therapy. Meanwhile, the control group, consisting of 40 cases, was administered treatment with acupressure at the Shenshu (BL23), Yin Ling Spring Cave, Taixi and Zusanli (ST36) points. Pain relief and disappearance were observed. The findings of this study indicate that the overall efficacy of the treatment group reached 97.5%, a considerably higher rate than that observed in the control group (80.00%). This difference was found to be statistically significant ( $P < 0.01$ ). This finding underscores the remarkable efficacy of the treatment regimen employed by the treatment group in alleviating clinical symptoms and enhancing the success rate of treatment. It is of considerable importance in advancing the progress of clinical practice in related fields and optimizing treatment regimens. The results show that the elbow tip pressing of "Traditional Chinese medicine special acupoint" in the management of renal colic has distinct characteristics associated with a single acupoint, easy positioning, fast pain relief and good curative effect.

**Keywords:** Special Acupoints of Traditional Chinese Medicine; Renal Colic; Shenshu; Yin Ling Spring Cave; Taixi; Zusanli

### 1. Introduction

Kidney colic is a prevalent acute urological condition characterized by excruciating

abdominal discomfort. It accounts for 5-10% of emergency department visits and represents a significant concern in the field of emergency medicine [1]. The pain is frequently localized at the angle of the costal vertebra, the lateral sacrospinous muscle, and below the 12th rib and is characteristically intense. Therefore, rapid and effective analgesia represents the initial step in the treatment plan, with the objective of reducing the patient's discomfort and establishing a foundation for subsequent treatment [2]. How to relieve pain without obvious adverse reactions is a hot topic of clinical research. Rapid pain relief for renal colic includes both pharmacologic and nonpharmacologic treatments. Medication includes: (1) Nonsteroidal anti-inflammatory drugs (NSAIDs) [3]: NSAIDs as the preferred analgesia are recommended by European Association of Urology guidelines; (2) Opioid analgesics [4]: These drugs have a strong analgesic effect, but the adverse effects include dizziness, nausea, constipation, urinary difficulties, etc., and long-term use is easy to produce dependence. But, with the terror of NSAIDs side effects and in light of the ongoing uncertainty regarding the superior analgesic efficacy of novel therapies, intravenous opioids remain a commonly utilized initial analgesic option within the medical community, particularly in the management of acute and severe pain conditions such as renal colic. This practice, while historically established, reflects a cautious approach to the efficacy and safety of these emerging analgesic therapies, underscoring the need for further research to optimize pain management strategies. Acupuncture can also be used to relieve renal colic except for medication: the available evidence suggests that acupuncture, either as an adjunct or as a monotherapy, demonstrates notable advantages in rapid analgesia in the

treatment of acute renal colic caused by urinary tract stones in adults. It can effectively relieve inflammation and muscle spasms by regulating meridians and dredging qi and blood, and it is straightforward to perform and has minimal side effects. It is an essential means of pain management [5]. Bao-Jun Ju et al. [6] found that acupuncture at Zusanli has a good analgesia effect and a low incidence of adverse reactions, which is superior to that of scopolamine and dolantin.

In recent years, the author has been pressing "TCM special acupoints" on the elbow tip to treat this disease and obtain a satisfactory effect.

## 2. Data and Methods

### 2.1 Clinical Data

Between January 2022 and February 2023, a total of 80 cases of renal colic presenting at the

Department of Emergency Surgery at the Second People's Hospital of Xiangtan were randomly assigned to two groups. The Observation Group comprised 40 cases that received treatment with elbow-tip compression using "special acupoints of traditional Chinese medicine", and forty cases in the Control Group received treatment at specific acupuncture points of Shenshu (BL23), Yin Ling Spring Cave, Taixi and Zusanli (ST36) points. This study has been approved by the Ethics Committee of the Second People's Hospital of Xiangtan City (approval number: 2022 001) and was conducted in accordance with the STROBE statement to ensure the ethical and scientific nature of the study. The specific conditions of the patients have been recorded in detail in Table 1, which provides a reliable basis for evaluating the efficacy of acupuncture therapy in adult acute renal colic caused by urinary calculi.

**Table 1. Comparison of General Patient Information**

Groups	Number of cases	Gender Sex		Age	The VAS Score
		Male	Female		
Observation group	40	29	11	40.42±7.25	8.98±1.56
Control Group	40	29	11	41.72±6.43	8.88±1.35
The t / chi ^ 2 value				1.47	0.02
The p-value				0.23	0.88

In this study, 80 patients were randomly divided into a treatment group and a control group, with 40 cases in each. A statistical analysis demonstrated that there were no statistically significant differences in age, gender, and the visual analog scale (VAS) pain index between the two groups ( $P > 0.05$ ). This ensured the balance and comparability of the trial and provided a reliable foundation for the evaluation of subsequent acupuncture treatment effects.

### 2.2 Inclusion Criteria

Patients were included in the study if they met the "criteria for diagnostic effectiveness of Traditional Chinese Medicine syndrome" [7]: (1) pain in the lumbar and abdominal region; (2) urinary frequency, urgency, astringency, closure, and pain; (3) previous history of urinary stones or confirmation of urinary stones by X-rays and/or B-ultrasound, or pain due to other diseases can be excluded even though it is not confirmed; (4) urinary tract discharge of sand and gravel; (5) renal region percussion, tenderness, and/or ureteral stroke

tenderness; and (6) visual and/or microscopic hematuria. The diagnosis is established by the conditions (1) + (3) or (1) + (4). This study included a diverse sample of adult patients aged 18 to 65 years with informed consent, exploring the efficacy and safety of acupuncture therapy in the treatment of acute renal colic caused by urinary stones.

### 2.3 Exclusion Criteria

Individuals presenting with the following conditions were excluded: (1) Lumbar spine and abdominal discomfort unrelated to stone formation; (2) Patients with loss of consciousness, mental illness, other serious medical complications or unstable vital signs, or those who are unable to cooperate; (3) Individuals who are expectant, planning to conceive, or nursing; (4) Individuals who are expectant, planning to conceive, or nursing; (5) Individuals with hypersensitivity to nonsteroidal anti-inflammatory drugs (NSAIDs), a prior history of gastrointestinal bleeding, current gastric ulcers, or other pertinent contraindications; (6) Patients with a

history of oral calcification and  $\alpha$ -blockers within 4 days prior to study enrollment.

## 2.4 Treatment Method

"Special acupoints of Traditional Chinese medicine": a vertical line separated 1.5 inches from the spine, and the intersection of the back of the horizontal plane of the abdominal pain point in the renal colic, that is, the corresponding point of the patient's abdominal pain point runs through the back. Key points: first, when using meditation to relax, the patient is prone on the bed, legs flat, focus on breathing, breathing rate between 16 and 18 times per minute, guide the patient to relax. Meditation relaxation training can help patients eliminate anxiety and tension and relieve pain. Use the tip of the right elbow to press the point slowly down to the muscle layer. Then, a 60° oblique direction pointed to the spine, in the 30s from light to heavy gradually after-force pressed, so that the patient has an obvious sense of acid distension, namely the so-called "qi". This intensity was maintained for 1 to 2 min, with significant pain relief after slow elbow relaxation. If the patient is relatively thin, you can use the thumb to press. The approach remains consistent with the method described previously. In the control group, Shenshu (BL23), Yin Ling Spring Cave, Taixi and Zusanli (ST36) were selected for finger pressure treatment to observe the pain relief and disappearance. In the same body position, you can press with the tip of the thumb or elbow.

## 2.5 Efficacy Criteria

One is to observe the analgesic effect of the two groups of patients in 60 min [9]: (1) obvious effect: pain completely relieved in 30 min, score 0-2; (2) effective: pain relieved in 60 min, score 2-4; (3) ineffective: pain not

relieved in 60 min, score 6-10, and need to add other analgesic drugs. Second, the Visual Analogue Scale (VAS) [10] was used for pain assessment, with a 10-cm straight line as the scale, 0 on the left side representing no pain, and 10 on the right side representing severe pain. Patients marked on the line according to their self-perception to reflect the degree of pain, in which 0~4 was mild pain, 4~6 was moderate pain, and 7~10 was severe pain. This method was highly sensitive and comparable, helping to assess the patient's pain status accurately.

## 2.6 Statistical Processing

In this study, SPSS 20.0 statistical software was used to conduct an in-depth analysis of the collected data. The measurement data were presented in the form of mean  $\pm$  standard deviation ( ), and the differences were evaluated by T-test. The statistical data were compared by  $\chi^2$  test, and  $P < 0.05$  was set as the significant difference standard to ensure the accuracy and scientific analysis results.

## 3. Results

On the basis of the efficacy criterion [9], the findings of this study demonstrated that the overall efficacy of the treatment in the observation group reached 97.5%, a considerably higher rate than the 80.00% observed in the control group ( $P < 0.01$ ). The comprehensive data presented in Table 2 further substantiated the superiority of this treatment plan, with a notable statistical distinction.

Pain assessment was performed using the visual simulation method (Visual Analogue Scale, VAS), and the results of the observation group showed that the degree of acute renal pain was significantly reduced. The results of the pain assessment are shown in Table 3.

**Table 2. Comparison of the Clinical Efficacy of the Two Groups (n)**

groups	n	Show efficiency	effective percentage	inefficiency	total effective rate
control group	40	25 (93.30%)	7 (3.33%)	8 (3.33%)	80.0%
observation group	40	36 (90.00%)	3 (6.67%)	1 (3.33%)	97.5%#

#  $P < 0.01$

**Table 3. Compares the Two Groups of (VAS) Pain Scores**

groups	n	Before the operation (VAS)	After the operation (VAS)
control group	40	8.88 $\pm$ 1.35	5.26 $\pm$ 1.47
observation group	40	8.98 $\pm$ 1.56	1.58 $\pm$ 1.68 #

#  $P < 0.01$

#### 4. Discussion

Renal colic is manifested as severe pain, accompanied by obvious nausea, vomiting and other symptoms. The patient with renal colic is very painful and even appears in shock. Prompt relief of pain is the first thing that needs to be addressed in the treatment of this disease before further tests and treatments are carried out [2]. Rapid pain relief for renal colic includes both pharmacologic and nonpharmacologic treatments [3]. In this study, the author used the method of pressing "Traditional Chinese medicine special acupoints" of the elbow tip to treat this disease and obtained a satisfactory effect. We divided 80 patients with renal colic into two groups using a randomized, single-blinded method. The observation group, consisting of 40 cases, received treatment using a specific approach, "special acupoints of traditional Chinese medicine" elbow tip pressing therapy, while the control group (40 cases) was treated with acupressure at the Shenshu (BL23), Yin Ling Spring Cave, Taixi and Zusanli (ST36) points. In contrast to the control group, the treatment group employed a different method, "Traditional Chinese medicine special acupoint," to treat renal colic effectively, reduce the pain of patients with renal colic, and improve the compliance and satisfaction of patients with treatment. The theory of the method of treating renal colic by "special acupoint of Traditional Chinese medicine" is inspired by the balance therapy of "Huangdi Neijing". Traditional Chinese medicine holds the view that discomfort in the human body arises when the flow of blood and qi (vital energy) is obstructed, that is, "no pain" acupoint massage can dredge the meridians and reconcile qi and blood so that the movement of qi and blood is smooth, so as to achieve the purpose of "no pain". Press the elbow tip, and the abdominal pain point corresponds to the back acupoint as if you have found the switch leading to kidney colic. Press the pain to significantly relieve, knead and open the blocking point, and keep the qi and blood pain stopping. According to modern medicine, the signal of pressing the special acupoints on the back of Traditional Chinese medicine from shallow to deep is transmitted to the center through the deep receptors of the acupoints and the excitement of the nerve endings. The resulting afferent impulse

entering the spinal cord crosses to the ventrolateral tract of the contralateral spinal cord, similar to the conduction pathway of nociception, providing a morphological basis for the interaction between this signal and the pain signal during afferents. This deep press signal travels along the afferent nerve into the spinal cord, interacting with nociceptive signals from the pain site. The signal and pain signal integration in the brain stem level, press signal along the ventral lateral cord into the medulla reticular structure of the giant nucleus, cause the nucleus unit discharge changes, nociceptive stimulation signal can also reach the giant nucleus, the two signals can gather in the same nucleus of the same cell, through interaction, damage response caused by inhibition. Both pain and pressing signals are feelings entering the realm of consciousness, and theoretically, the afferent impulse that conveys these feelings necessarily projects to the cortex, where they interact and integrate to achieve analgesic effects. During pressing analgesia, the release of opioid peptides in the brain increases, among which  $\beta$  ~ endorphin and enkephalin have strong analgesic effects in the brain, and enkephalin and dykephalin have an analgesic effect in the spinal cord. The meridians of the human body are connected up and down, interconnected, crisscrossed, and connected all over the body. The practice has proved that choosing an appropriate acupoint massage according to the pain parts can play an effective analgesic role. In the control group, Renshu, Yinlingquan, Taixi and Zusanli points were selected, and the response rate was considerably lower than that of the observation group, and the VAS score following treatment was markedly higher than that of the observation group. Moreover, this method is cumbersome, and the clinical practice is not easy. Therefore, the special acupuncture point massage therapy of traditional Chinese medicine selected by the observation group is simple and easy to perform, does not need special instruments, is not limited by time and space, is economical and safe, and is worthy of promotion and application.

In managing patients with renal colic, it is essential to both identify the underlying cause and alleviate the symptoms of the condition. In the aspect of finding the cause, it is necessary to carefully ask for the medical history, detailed physical examination, urine

examination, abdominal B ultrasound examination, abdominal CT examination, X-ray examination and other auxiliary examinations. In addition, renal colic needs to be differentiated from acute biliary colic, biliary ascariasis, acute pancreatitis, intra-abdominal incarcerated hernia, gastrointestinal perforation, diverticulitis, allergic colitis, volvulus of ovarian tumour, ectopic pregnancy, acute salpingitis, lead poisoning, etc. After the cause is clear, the urology department for further specialized treatment, such as drug discharge, extracorporeal shock wave or pneumatic urethral lithotripsy, percutaneous nephrolithotomy or lithotripsy, ureteroscopy or lithotripsy, etc. The causes of renal colic mainly include the following [10]: (1) Urinary stones: renal colic is usually caused by urinary stones, such as kidney stones and ureteral stones. The stone moves rapidly in the renal pelvis or ureter or suddenly becomes embedded, leading to acute obstruction of the upper urinary tract and triggering severe pain. (2) Renal pelvis or ureteral stenosis: Renal pelvis or ureteral stenosis may lead to poor urine flow, which in turn triggers renal colic. (3) Urinary tract infection: a urinary tract infection can result in the inflammation and swelling of the mucous membrane lining the urinary tract, potentially causing renal colic. (4) Renal tumor: when the renal tumor is large, it may compress the ureter or renal pelvis, resulting in obstruction of urine flow and causing renal colic. (5) Trauma: Strenuous exercise or trauma may lead to kidney or ureter injury, which may cause renal colic. (6) Overexertion, hot work, field activities, etc. Prolonged intense labor or activities in hot weather may lead to dehydration of the body, which concentrates urine, thus increasing the risk of stone formation and triggering renal colic.

## 5. Conclusion

Renal colic is considered one of the most prevalent urological emergencies. The patient with renal colic is very painful and even appears in shock. Prompt relief of pain is the first thing that needs to be addressed in the treatment of this disease before further tests and treatments are carried out. Rapid pain relief for renal colic includes both pharmacologic and nonpharmacologic treatments. How to relieve pain without

obvious adverse reactions is a hot topic of clinical research. In this study, the author used the method of pressing "TCM special acupoints" of the elbow tip to treat this disease and obtained a satisfactory effect. The results show that the elbow tip pressing of "Traditional Chinese medicine special acupoint" in the treatment of renal colic has the characteristics of a single acupoint, easy positioning, fast pain relief and good curative effects.

Finally, it should be emphasized that there is a need to actively find the cause while alleviating renal colic and conduct specialized treatment for the cause.

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