

### Clinical Research

# Modified green dragon swaying its tail needling manipulation for treatment of knee osteoarthritis

## 改良青龙摆尾针法治疗膝骨性关节炎的临床对照研究

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#### ABSTRACT

**Objective** To compare the difference in the effect of modified green dragon swaying its tail needling manipulation and common needling manipulations on the overall rating of pain of patients with knee osteoarthritis, and to evaluate the advantages of modified green dragon swaying its tail needling manipulation for. Methods Ninety-five patients with knee osteoarthritis were divided into 2 groups according to the random number table method with 48 patients in the modified green dragon swaying its tail group (group special manipulation, SM group for short) and 47 patients in the common acupuncture group (group convention needling, CN group for short), and different acupuncture manipulations were applied in the two groups. Internationally recognized Simplified McGill Pain Questionnaire (SF-MPQ) scale used for description and measurement of pain was applied to evaluate the pain degree, including pain rating index (PRI), visnal analogue scale (VAS)and present pain intensity (PPI). The index of severity for osteoarthritis (ISOA) was adopted for evaluation of clinical efficacy. Results (1) In SM group, the scores of PRI, VAS and PPI were 6.63±4.67, 2.23±1.45 and 0.65±1.32, respectively, after treatment, and in CN group, the scores of PRI, VAS and PPI were 13.32±7.96, 4.34±1.79 and 2.28±1.21, respectively, the scores decreased in the two groups after treatment (all P<0.05), and the improvement in SM group was superior to that in CN group (all P<0.01). (2) The clinical cure rate in SM group was 52.08%, and the total effective rate was 97.92%, the clinical cure rate in CN group was 25.53%, and the total effective rate was 85.10%. The comparison of clinical cure rate in the two groups showed that P<0.01. Conclusion The SM group is obviously superior to CN group in the improvement of overall rating of pain of patients. It is indicated that modified green dragon swaying its tail acupuncture therapy can effectively relieve the pain of patients with knee osteoarthritis, which was worthy of popularization and application with definite clinical efficacy

**KEY WORDS:** knee osteoarthritis; green dragon swaying its tail of needling manipulation; MPQ pain scale; Index of severity for osteoarthritis (ISOA)

Knee osteoarthritis (KOA) is a kind of common and frequently-occurring disease in seniors, which is the major cause of movement disorders in seniors, and severely affect the health of middle-aged and aged people<sup>[1]</sup>. In China, about 80% of the people at the age of more than 65 years old are attacked



by osteoarthritis. With the extension of human life, and the aging of social population, the incidence of knee osteoarthritis is increasing year by year<sup>[2]</sup>. The main clinical manifestations of knee osteoarthritis include knee pain, functional limitation, and even knee deformity, which seriously affect the patients' physical and mental health and the quality of life, and bring great suffering to patients<sup>[3]</sup>. Acupuncturemoxibustion is one of the therapies with definite efficacy for treatment of knee osteoarthritis<sup>[4]</sup>. In order to further improve the clinical efficacy of acupuncture manipulation, the authors applied modified green dragon swaying its tail needling manipulation invented by prestigious physician of TCM LI Jia-kang to treat knee osteoarthritis, and made a control study by comparing with common acupuncture manipulations. The details are reported as follows.

#### **CLINICAL DATA**

#### General data

The outpatients and inpatients of Department of Acupuncture-Moxibustion, Hubei Provincial Hospital of TCM who visited the hospital from June 2015 to June 2016 were enrolled and divided into 2 groups according to the visiting sequence for the first time by adopting the random number table method: 50 cases in the modified green dragon swaying its tail group (group special manipulation, SM group for short) and 50 in the common acupuncture group (group convention needling, CN group for short). Fifteen males and 35 females were included in SM group, with the age ranged from 40 to 64 years old and the course of disease from 6 months to 5.2 years; 17 males and 33 females were included in CN group, with the age ranged from 41 to 65 years old and the course of disease from 5 months to 4.8 years. According to the statistical analysis of gender, age and course of disease in the two groups, the differences were not statistically significant (all P > 0.05), and the results were comparable. Among these patients, 95 cases completed the study. One case withdrew from SM group with 1 case of loss to follow-up, and 2 cases withdrew from CN group with 1 case of loss to follow-up. The details were shown in Table 1.

Table 1 Comparison of general data on the patients with knee osteoarthritis in the two groups  $(\bar{x}\pm s)$ 

Groups	Patients	Gender (case)		- Age (year)	Course of disease
		Female	Male	- Age (year)	(month)
SM	48	33	15	57.12±9.78	21.38±4.74
CN	47	30	17	$56.49 \pm 11.36$	$20.29 \pm 5.65$

#### Diagnostic criteria

The diagnostic criteria were formulated by reference to the Guidelines for Diagnosis and Treatment of Osteoarthritis (Edition in 2007) issued by Chinese Orthopaedic Association, Chinese Medical Association<sup>[5]</sup>. ① With repeated knee pain in recent one month; ② the X-ray (standing or in weight loading) indicated joint clearance narrowing, subchondral bone sclerosis and (or) cystic degeneration and formation of osteophyte; 3 clear and sticky joint fluid (for at least 2 times), WBC<2000/mL; 4 middle-aged and aged patients (≥ 40 years old); ⑤ morning stiffness ≤ 30 min; (6) with bony crepitus (bone friction feeling) in the process of activity. According to the clinical, laboratory and X-ray examinations, the patients conforming to 1+2, 1+3+5+6 or 1+4+5+6 were diagnosed with knee osteoarthritis.

#### **Inclusion criteria**

① With the age ranged from 40 to 65 years old. ② the patients who signed the informed consent form and completed all the examinations and questionnaires according to doctor's requirements.

#### **Exclusion criteria**

① Concomitantly with severe diseases including heart, brain, liver, kidney and hematopoietic system diseases; ② the patients who accepted acupuncture-moxibustion therapy within 3 months before this treatment; ③ pregnant women or lactating women, and patients with mental disorder; ④ the patients who were participating in other clinical study; ⑤ the patients who cannot cooperate with doctors or insist on the treatment; ⑥ the patients who had complications affecting the joint, such as psoriasis, metabolic bone disease, tuberculosis or tumor of knee joint, suppurative arthritis, and acute trauma (including meniscus injury of knee joint, collateral ligament injury of knee joint, cruciate ligament injury, traumatic synovitis or hematoma of knee joint), etc.

This study was examined and approved by the Ethics Committee of Hubei Provincial Hospital of TCM (approval No. HBZY2015-C27-01).

#### **METHODS**

#### SM group

Modified green dragon swaying its tail needling manipulation was applied. (1) Acupoint selection: main acupoints: Dúbí (犊鼻 ST 35) and Nèixīyǎn (内膝眼 EX-LE4), combined acupoints: Zúsānlǐ (足三里ST 36), Yánglíngquán (阳陵泉 GB 34), Xuèhǎi (血海SP 10), Xuánzhōng (悬钟 GB 39) and *Ashi* point. (2)

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