Warm Needling Moxibustion for Knee Osteoarthritis: A Randomized Controlled Trial

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Abstract

Objective: To observe the clinical effect of warm needling moxibustion for knee osteoarthritis (KOA) by a randomized controlled trial.

Methods: Sixty cases with KOA were randomly divided into an observation group and a control group, 30 cases in each group. The observation group was treated by warm needling moxibustion. The control group was treated by simple acupuncture. Ten sessions made one course and the two groups were treated for two courses. The scores of knee joint pain, stiffness and knee functions before and after the treatment were observed.

Results: The scores of Western Ontario and McMaster Universities osteoarthritis index (WOMAC) on pain, stiffness and joint functions before and after treatment in both groups were statistically different (all $P<0.05$). The comparisons of the scores in pain, stiffness and joint function after treatment between the two groups were all statistically different (all $P<0.05$). The total effective rate was 93.3% in the observation group and 80.0% in the control group. The differences of the clinical effects between the two groups were statistically significant ($P<0.05$).

Conclusion: Warm needling moxibustion can improve the clinical symptoms and functions of the patients with KOA, and is better than ordinary acupuncture in the therapeutic effect.

Key Words

Acupuncture Therapy; Moxibustion Therapy; Warm Needling Therapy; Osteoarthritis, Knee; Randomized Controlled Trial

With the advent of an aging society, the incidence of knee osteoarthritis (KOA) goes up increasingly. The incidence of osteoarthritis in the population over 50 years old in China is about 5%, with KOA accounting for 9.56%. The incidence of osteoarthritis in the population over 60 in China is about 20%, with KOA accounting for 78.5%. The author treated 30 cases of KOA with the warm needling moxibustion in 2012, in comparison with the ordinary acupuncture group. Now, the report is given as follows.

1 Clinical Materials

1.1 Diagnostic criteria

The diagnostic criteria were based upon the Guideline for Diagnosis and Treatment of Osteoarthritis (2007 edition): recurrent knee joint pain over the recent three months; stenosis of joint space showed by X-ray film (standing or loading position), sclerosis and/or cystic change of...
subchondral bone, osteophyte formation at the joint margin; clear and tenacious synovial fluid (at least twice), white blood count (WBC) < 2000/mL; middle-aged and elderly patients (≥ 40 years old); morning stiffness ≤ 30 min; bony crepitus (feeling) in movement.

In combination of clinical, laboratory and X-ray examinations, KOA can be diagnosed when the previous two items or first, third, fifth and sixth item or first, fourth, fifth and sixth item are conformed.

1.2 Inclusion criteria
Those in conformity with the above diagnostic criteria; able to accept and continue two courses of acupuncture treatment, able to cooperate with this study; at the age not less than 40 years old.

1.3 Exclusion criteria
Those complicated with severe cardiac and pulmonary diseases, hypertension, mental disorders, and dermal diseases in the whole body; pregnant women or women during period, in allergic and weak constitution, and with severe joint deformity of later stage; those with cardiac, hepatic and renal insufficiency, severe tuberculosis, acute and suppurative, infectious diseases and chronic dermal diseases, and reduced arterial pressure.

1.4 Statistical methods
Data were processed by the SPSS 10.0 version software. The measurement data were expressed by mean ± standard deviation (x ± s), the paired sample t-test was adopted for comparison within the group, and the independent sample t-test was adopted for comparison between the groups. The grading data were processed by Kruskal-Wallis rank-sum test. P<0.05 was used to express statistical significance in differences.

1.5 General data
Totally, 60 patients with KOA were randomly divided into an observation group and a control group by their visit order, 30 cases in each group. The gender, age and duration between the two groups were not statistically different (all P>0.05), indicating that the two groups were comparable (Table 1).

<table>
<thead>
<tr>
<th>Groups</th>
<th>n</th>
<th>Male</th>
<th>Female</th>
<th>Average age (x ± s, year)</th>
<th>Average duration (x ± s, month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>30</td>
<td>15</td>
<td>15</td>
<td>58.9±10.6</td>
<td>5.4±1.6</td>
</tr>
<tr>
<td>Control</td>
<td>30</td>
<td>16</td>
<td>14</td>
<td>58.3±9.3</td>
<td>5.2±1.3</td>
</tr>
</tbody>
</table>

2 Therapeutic Methods

2.1 Observation group
Acupoints: Yinlingquan (SP 9), Yanglingquan (GB 34), Neixiyan (EX-LE 4), Dubi (ST 35), Xuehai (SP 10) and Liangqiu (ST 34).
Operation: The filiform needles of 0.30 mm in diameter and 40 mm in length were selected. After routine disinfection, the needles were quickly inserted to the stipulated depth. After arrival of the needling sensation, a piece of pure moxa roll in length of 1.5 cm was put on the needle handle and ignited from its bottom. The patient had a warm sensation in the local area, without burning and painful sensation. After moxa was completely burnt down and cooled down, the needles were taken out. The treatment was given for 20 min every time, once per day. Ten sessions constituted one course, and totally two courses were given.

2.2 Control group
The patients in the control group only received acupuncture treatment, and the acupoints and needling operation were as same as those in the observation group, but without moxibustion. The treating time and courses were as same as those in the observation group.

3 Observation on Therapeutic Effects

3.1 Observed indexes
Western Ontario and McMaster Universities osteoarthritis index (WOMAC) was used[4]. This scale includes three aspects of pain, morning stiffness, and daily activities, totally 24 items. Among them, there were five items on pain, two items on stiffness, and seventeen items on joint function. The assessment was processed by questionnaire. The patients were asked to fill in the questionnaire according to their own body condition, to tick one point for the mildest degree or no influence from this disease, and to tick five points for the most severe or severely restricted activity by this disease. The total scores were obtained after the points were summed up. The higher the total score, the more severe the pathologic condition.

3.2 Criteria of therapeutic effects[5]
In accordance with WOMAC score, the score-reducing rate was calculated by Nimodipine formula.