Influence of the quickness and duration of De Qi on the analgesic effect of acupuncture in primary dysmenorrhea patients with a cold and dampness stagnation pattern


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Supported by the National Basic Research Program of China (973 Program) — the Effect of De Qi on Acupoint Specific Effect Based on Meridians and its Characteristics and Molecular Response Mechanisms (No. 2012CB518506), Research on Acupoint Specificity in Regulating Uterus (No. 2006CB504503), and the Scientific Research Development Fund Program of Beijing University of Chinese Medicine — the Effect of Anxiety on De Qi in Primary Dysmenorrhea Patients with Cold and Dampness Stagnation Pattern (No. 2016-ZXFZZJ-086).
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Accepted: November 7, 2018

Abstract

OBJECTIVE: To investigate the influence of the quickness and duration of De Qi (or Qi arrival) on the analgesic effect of acupuncture in primary dysmenorrhea patients with a cold and dampness stagnation pattern.

METHODS: Sixty-eight patients were randomly assigned to the De Qi group (deep needling with thick needles and manipulation, n = 17) or the non-De Qi group (shallow needling with thin needles and no manipulation, n = 51). Both groups underwent needling at Sanyinjiao (SP 6) for 30 min. The visual analogue scale was used to measure the degree of menstrual pain, and the Acupuncture De Qi Clinical Assessment Scale was used to assess De Qi. Only data from patients who experienced actual De Qi were included in the analysis.

RESULTS: Thirty-nine patients experienced actual De Qi. Patients who experienced actual De Qi in the De Qi group (n = 14) felt De Qi more rapidly (P = 0.028) and for a longer duration (P = 0.04) than patients who experienced actual De Qi in the non-De Qi group (n = 25). Both groups showed a reduction in the visual analogue scale score for pain after treatment. The analgesic effect did not significantly differ between the two groups. The occurrence time of De Qi showed a significant negative correlation with pain reduction at 20 and 30 min after needle removal (P < 0.05). There was no correlation between the duration of De Qi and the therapeutic effect.

CONCLUSION: In primary dysmenorrhea patients with a cold and dampness stagnation pattern, quicker onset of De Qi when needling Sanyinjiao (SP 6) achieves a better analgesic outcome. However, a longer duration of De Qi does not affect the degree of analgesia. Compared with minimal acupuncture, active acupuncture stimulation achieves a more rapid onset and longer duration of De Qi.

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Keywords: Dysmenorrhea; Cold-dampness; Acu-
INTRODUCTION

Primary dysmenorrhea (PD) refers to painful uterine cramps that occur before or during the menstrual period in the absence of any organic cause. PD is very common in women of reproductive age, and significantly affects all aspects of daily life. Regarding the management of PD, there is growing acceptance of acupuncture as a non-pharmaceutical therapy. De Qi (or Qi arrival) was derived from the *Huangdi Neijing*. The classic concept of De Qi mainly focused on the needle grasping sensation of heaviness and tenseness about the needle that was perceived by the acupuncturist. However, the patient’s feelings have gradually been paid more attention, especially in modern research, and are now considered to be a marker of adequate acupuncture.

Increasing numbers of studies have begun to explore De Qi and its implications, including the connotation of De Qi, influencing factors, responses in various brain areas, quantitative evaluation, and the relationship between De Qi and therapeutic effect. In particular, the relationship between De Qi and the therapeutic effect of acupuncture has attracted wide attention and remains to be verified. Studies have investigated the influence on the therapeutic effect of the presence or absence of De Qi, the intensity of De Qi, specific sensory components of De Qi, but the impacts of the quickness of Qi arrival (quick or slow De Qi) and the duration of De Qi on therapeutic effect has rarely been discussed. Some classic acupuncture works state that a better therapeutic effect is achieved with a quicker onset and longer duration of De Qi. However, few clinical trials have evaluated this long-held view in traditional acupuncture.

Our research team developed an Acupuncture De Qi Clinical Assessment Scale (ADCAS) with good reliability and validity to assess De Qi and its intensity. A prospective multi-center randomized controlled trial (RCT) using the ADCAS showed that PD patients who felt De Qi experienced superior analgesic effects compared with those who did not experience De Qi. The present study aimed to evaluate the influence of the quickness of Qi arrival (quick or slow De Qi) and the duration of De Qi on the therapeutic effect in primary PD patients with a cold and dampness stagnation pattern.

METHODS

We performed the present RCT to investigate the relationship between De Qi and the treatment effect in primary PD patients with a cold and dampness stagnation pattern. The present RCT was conducted in the laboratory of the School of Acupuncture-moxibustion and Tuina of the Beijing University of Chinese Medicine (BUCM). The trial was performed in accordance with the guidelines of the Declaration of Helsinki, and was approved by the Ethics Committee of the BUCM (No. 2014BZYLL0302) and registered in the Chinese Clinical Trial Registry (registration No. ChiCTR-IPR-14005361).

Inclusion criteria

Patients were included if they were nulliparous women aged 18-30 years who had been diagnosed with PD in accordance with the criteria of the Primary Dysmenorrhea Consensus Guideline, and a cold and dampness stagnation pattern based on the revised Chinese national guidelines, with a duration of PD (self-reported pain) of 6 months to 15 years, an average pain intensity of 40 or more on a 100-mm visual analogue scale (VAS) for at least three consecutive menstrual cycles, and gave written informed consent. The criterion for the diagnosis of a cold and dampness stagnation pattern was a total score of 6 or higher; this total score comprised the addition of primary and secondary symptom scores, with each primary symptom assigned a score of 2 points, and each secondary symptom assigned a score of 1 point. The primary symptoms were: (a) cold lower abdominal pain before or during the menstrual period, alleviated by warmth; (b) scanty menses; (c) dark, clotted menses; (d) or menses with the appearance of black soybean milk. The secondary symptoms were: (a) cold intolerance; (b) lack of warmth in the extremities; (c) profuse vaginal discharge; (d) white and greasy tongue coating; (e) wiry pulse; or deep and tight pulse.

Exclusion criteria

Patients were excluded if they had one or more of the following criteria: secondary dysmenorrhea (e.g. caused by endometriosis or adenomyosis), irregular/infrequent menstrual cycles (outside of the typical range of a 21 to 35 d cycle), pregnancy, prior knowledge of acupuncture, intake of analgesic medication in the 24-h period prior to intervention, asthma, psychological disorders, life-threatening conditions (e.g. cardiovascular, hepatic, renal, or hematopoietic disorders), or potential problems with treatment compliance. Each participant was assessed by two primary researchers in accordance with the criteria of pattern identification. One of these researchers was a Ph.D. candidate with 5 years of clinical experience in Traditional Chinese Medicine (TCM), and the other was a Masters student with 3 years of clinical experience. If both researchers diagnosed the patient with the same pattern, the syndrome pattern was defined as the final pattern. If the two researchers each diagnosed the same patient with different patterns, the final pattern identification was made by another researcher with more than 10 years of clinical experience.
Eligible candidates were evaluated, informed about the study procedures and potential risks, and underwent a full medical and gynecological history collection. Further examination and ultrasonography was performed for patients who met the preliminary evaluation criteria and provided written consent. Patients who met all the inclusion criteria were enrolled.

Sample size
Our previous studies on PD have shown that the minimal clinically effective change in the abdominal VAS for pain (VAS-P) is 10 mm.\textsuperscript{27} and the mean abdominal VAS-P before treatment is 15.93±4. Using the calculation formula for sample size estimation for repeated measurements design data,\textsuperscript{28} the initial sample size was determined to be 14 for each group with 70% power and \(\alpha = 0.05\). In a previous study, patients in the “De Qi” group all actually experienced De Qi, while only about 1/3 of those in the “no De Qi” group did not actually experience De Qi.\textsuperscript{29} That is, active acupuncture with the intention of achieving De Qi triggers De Qi in 100% of patients, while minimal acupuncture with the purpose of avoiding De Qi induces non-De Qi in only about 36% of patients. Therefore, the number of patients in the control group must be three times that of the test group to adequately compare the same number of patients with actual De Qi versus the number of patients with the actual absence of De Qi. Moreover, as acupuncture with De Qi achieves a better curative effect than that without De Qi,\textsuperscript{30} it is meaningful to evaluate the relationship between the occurrence time and therapeutic effect. Thus, the ratio between the De Qi group and the non-De Qi group in the present trial was 1:3. The sample size recruitment target was set at 68, considering a probable dropout rate of 20%. The final sample comprised 17 patients in the De Qi group, and 51 in the non-De Qi group.

Randomization and blinding
Patients were randomly allocated to either the De Qi group or the non-De Qi group in a 1:3 ratio using a centralized telephone randomization procedure before treatment. The random allocation sequence was generated using the Statistical Package for the Social Sciences version 17.0 (SPSS Inc., Chicago, IL, USA) by a coordinator who did not involve in the data collection in the laboratory at the School of Acupuncture-Moxibustion and Tuina of the BUCM. The coordinator sealed the allocation information in opaque envelopes, and informed the acupuncturist of the assignment by telephone 5 to 10 min before treatment commencement.

The patients and recorder were unaware of the treatment assignment and were blinded to the procedure; a screen was placed between the recorder who was responsible for evaluating De Qi and the acupuncturist to ensure that the recorder could not see the process. Only the acupuncturist who administered the treatment knew the group allocation of each patient. The acupuncturist wore earplugs to avoid being affected by vocal self-reporting from patients during needling stimulation.

Interventions
All participants received needling treatment following the TCM style. Study interventions were developed by consensus between acupuncture experts and practitioners. Minimal acupuncture was used as a sham intervention. Sanyinjiao (SP 6), one of the points most commonly used in both acupuncture and acupressure to treat PD,\textsuperscript{31,32} is located on the tibial aspect of the leg, posterior to the medial border of the tibia, 3 proportional bone cun above the prominence of the medial malleolus.\textsuperscript{33} Patients were informed that they would have a 50% chance of receiving active acupuncture or minimal acupuncture, and that both procedures have been associated with positive outcomes in clinical studies. All patients received acupuncture stimulation at bilateral Sanyinjiao (SP 6) while in a supine position. We used sterile disposable stainless acupuncture needles with guide tubes (Zhongyan Taihe, Wuxi Jiahuan Medical Instrument Co., Ltd., Jiangsu, China). Treatment was administered once on the first day of menstruation on which the patient had a VAS-P of \(\geq 40\) mm. The De Qi group received needling treatment using 0.30 mm × 40 mm needles with guide tubes. After local sterilization, the needle was vertically inserted to a depth of 1-1.2 cun, and then manipulated by lifting, thrusting, and twirling (180° in both directions, once every 1 s) for 30 s with the intention of achieving De Qi. The manipulation was repeated twice every 10 min for 30 s each time. The non-De Qi group received treatment using 0.18 mm × 13 mm needles with guide tubes. The needle was vertically inserted to a depth of 0.1-0.2 cun, and no manipulation was applied, with the intention of avoiding De Qi. The total duration of stimulation was 30 min in both groups. All treatments were performed by the same licensed acupuncture practitioner with 5 years of experience.

Outcomes
The VAS-P provides a continuous quantitative value from 0 mm (no pain) to 100 mm (worst pain imaginable). The VAS-P was used to measure the changes in the degree of pain before treatment (VAS-P\(b\)), at needle removal (VAS-P\(n\)), 10 min after needle removal (VAS-P\(n\)), 20 min after needle removal (VAS-P\(n\)), and 30 min after needle removal (VAS-P\(n\)). The ADCAS was used to record the De Qi sensation.\textsuperscript{34} This scale was developed based on a literature review of the connotation of De Qi, and the experience and comments of 43 acupuncture experts from China. The ADCAS showed satisfactory reliability and validity in a clinical trial (the related article is currently being written). The ADCAS includes an assessment of the gener-
al strength of needle sensation (none: 0; mild: 1; moderate: 2; strong: 3; unbearable sharp pain: 4). In accordance with the connotation of De Qi and comments of acupuncture experts, we did not consider the strong and sharp pain (ADCAS scores of 4) on either side of Sanyinjiao (SP 6) as De Qi in our study. The total score for the general needle sensation in the ADCAS was the sum of the scores on both sides, ranging from 0-8. Five conditions were categorized as no De Qi (0 + 0, 0 + 1, 0 + 4, 4 + 4, and 1 + 4), while 10 conditions were categorized as De Qi, as discussed in a previous study. Patients were then reclassified in accordance with their actual De Qi experience. In our research, a recorder with a stopwatch (taking 1/100 s as a unit of time) sat at one side of the upper body of the patient at a distance from which the vocal response of the patient could be heard. After needling at Sanyinjiao (SP 6) by the acupuncturist located on the side of the patient’s feet, the patient told the recorder “Yes” once they experienced De Qi sensation and “No” once the sense perception was gone. The recorder timed these responses using the stopwatch to record the occurrence time and disappearance time of De Qi, which were used to describe the quickness of De Qi and its duration. However, the pain caused by the penetration of the needle into the skin is not confined to De Qi. Only data from patients who experienced actual De Qi were analyzed. Any adverse reactions (e.g., fainting, hematoma) were documented.

**Statistical analysis**

Data are expressed as the mean ± standard error of the mean. The independent sample t-test or Mann-Whitney U test was used to compare the differences between groups. Spearman’s correlation analysis was used to observe the correlation between the occurrence time of Qi arrival and the duration of De Qi and efficacy. \( P \leq 0.05 \) was set as the significant level.

**RESULTS**

**Patient enrollment**

Between September 2014 and May 2015, 179 patients with dysmenorrhea applied to participate in the present study, of which 93 patients received a preliminary diagnosis of PD with a cold and dampness stagnation pattern. Eighty-two patients provided written informed consent and underwent further examination, of which 14 were excluded because they did not meet the diagnostic criteria. Of the 68 enrolled patients, four were excluded because they had VAS-P scores of < 40 mm before treatment (two in the De Qi group and two in the non-De Qi group). The ADCAS results showed that one patient in the De Qi group and seven in the non-De Qi group exhibited contradictory data (e.g., the overall needle sensation was recorded as 0, but numbness was recorded as 1), and were excluded from analysis. Data from 56 patients were valid. To assess the actual De Qi experience, we reclassified all patients in accordance with their overall needle sensation. All 14 patients in the De Qi group experienced actual De Qi sensation (subgroup A), while none experienced no De Qi sensation (subgroup B). However, not all patients in the non-De Qi group reported the absence of De Qi; 25 (59.5%) experienced the classical De Qi sensation (subgroup C), while the remaining 17 (40.5%) patients were considered to have not experienced De Qi (subgroup D), illustrating that De Qi experience is not necessarily consistent with De Qi (non-) intention. The positive influence of De Qi on therapeutic effect has already been proved. The present study aimed to further investigate the impact of the quickness and duration of De Qi on the treatment outcome. Thus, only data from patients who experienced actual De Qi were analyzed (subgroups A and C). Overall, data from 39 patients who felt De Qi were analyzed (Figure 1).

**Baseline data**

There were no significant differences in the baseline characteristics of the two groups and subgroups before treatment (Table 1).

**Analgesic effect**

The VAS-P scores at different timepoints are summarized in Table 2. The VAS-P significantly differed between timepoints in both subgroup A (\( P < 0.05 \)) and subgroup C (\( P < 0.05 \)). There was no significant difference in the change in the VAS-P between subgroups A and C (\( P = 0.076 \)).

**Quickness and duration of De Qi**

In subgroup A, the occurrence time and duration of De Qi sensation were (4.7 ± 0.9) and (19.5 ± 2.4) s; for subgroup C they were (81.9 ± 41.7) and (12.9 ± 1.9) min, respectively. Compared with subgroup C, subgroup A experienced De Qi significantly quicker (-77.27 s; 95% CI -163.31 to 8.78, \( P = 0.028 \)) and for a longer duration (6.63 s; 95% CI 0.26 to 13.00, \( P = 0.04 \)). In subgroup C, it took three patients a relatively long time to obtain the sense of De Qi (184.62, 631.5, and 875.13 s); thus, the standard error was large (41.68 s).

**Correlation between the quickness and duration of De Qi and treatment efficacy**

In subgroup A, there was a significant negative correlation between the occurrence time of De Qi and pain reduction from baseline to 20 min after needle removal (\( r = -0.559, P = 0.037 \)) and 30 min after needle removal (\( r = -0.595, P = 0.025 \)). In subgroup C, there were no significant correlations between the occurrence time of De Qi and treatment efficacy. Regardless of group allocation, among all patients who actually experienced De Qi (subgroup A + C, \( n = 39 \)), there was a significant negative correlation between the occurrence time of De Qi and pain reduction from baseline to 20 min after needle removal (\( r = -0.409, P = 0.010 \))
and 30 min after needle removal ($r = -0.449, P = 0.004$). This means that a quicker onset of De Qi resulted in a better treatment effect at 20 and 30 min after needle removal. There were no significant correlations between the duration of De Qi and pain reduction in any subgroup (Table 3).

### DISCUSSION

#### Main findings

In our study, pain relief was experienced after treatment in both subgroup A (those who received active acupuncture and experienced actual De Qi) and subgroup C (those who received minimal acupuncture and experienced actual De Qi) (Table 1).
and experienced actual De Qi. Patients in subgroup A achieved quicker De Qi with a longer duration than those in subgroup C. However, there was no significant difference between these two subgroups in the change in VAS-P. Furthermore, the quickness of De Qi was correlated with therapeutic effect in subgroup A and subgroup A+, but not in subgroup C. Our results suggest that a more rapid onset of De Qi results in a better therapeutic effect at 20 and 30 min after needle removal, which was more evident in those who underwent strong acupuncture stimulation. Furthermore, active needle manipulation made the De Qi sensation appear more quickly and for a longer duration than superficial needling using a thin needle without manipulation.

**Influence of the quickness and duration of De Qi on therapeutic effect**

The relationship between De Qi and therapeutic effect has aroused considerable attention in modern research. However, the current literature is not sufficient to draw definite conclusions. Some recent studies showed that De Qi is essential and necessary for achieving better treatment effects, while others report that De Qi is irrelevant to therapeutic effect. Our previous RCT conducted to evaluate the relationship between De Qi and analgesic effect showed that De Qi improves the immediate analgesic effect. The results of the present study suggest that a quicker onset of De Qi results in a better therapeutic effect at 20 and 30 min after needle removal, especially in active acupuncture. To a certain extent, this finding verifies the abovementioned classical TCM theory. However, there was no relationship between the duration of De Qi and acupuncture analgesic effect. Such a result may stem from the small sample and short observation time.

**Influence of acupuncture intervention on the quickness and duration of De Qi**

Needling depth and manipulation, which can create different stimulus intensity, are connected to De Qi.

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**Table 2: Visual analogue scale scores for pain (VAS-P) at different timepoints**

<table>
<thead>
<tr>
<th>Item</th>
<th>Subgroup A (n = 14)</th>
<th>Subgroup C (n = 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAS-P0</td>
<td>53.5±3.1</td>
<td>54.4±1.9</td>
</tr>
<tr>
<td>VAS-P10</td>
<td>29.7±4.5</td>
<td>37.2±2.6</td>
</tr>
<tr>
<td>VAS-P20</td>
<td>23.3±4.4</td>
<td>31.3±3.2</td>
</tr>
<tr>
<td>VAS-P30</td>
<td>20.6±4.4</td>
<td>26.4±3.6</td>
</tr>
<tr>
<td>VAS-P40</td>
<td>13.1±3.2</td>
<td>22.0±3.8</td>
</tr>
</tbody>
</table>

Notes: values are given as the mean ± standard error of the mean. Subgroup A: patients who received active acupuncture who experienced actual De Qi; subgroup C: patients who received minimal acupuncture who experienced actual De Qi before treatment; VAS-P0: VAS-P at needle removal; VAS-P10: VAS-P 10 min after needle removal; VAS-P20: VAS-P 20 min after needle removal; VAS-P30: VAS-P 30 min after needle removal.

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**Table 3: Correlation between pain reduction and occurrence time and duration of De Qi**

<table>
<thead>
<tr>
<th>Item</th>
<th>Subgroup A</th>
<th>Subgroup C</th>
<th>Subgroup A+C</th>
<th>p value</th>
<th>r value</th>
<th>p value</th>
<th>r value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAS-P-VAS-P0</td>
<td>-0.525</td>
<td>0.276</td>
<td>0.122</td>
<td>0.004</td>
<td>0.544</td>
<td>0.007</td>
<td>0.097</td>
<td>0.005</td>
</tr>
<tr>
<td>VAS-P-VAS-P10</td>
<td>-0.455</td>
<td>0.291</td>
<td>0.291</td>
<td>0.066</td>
<td>0.067</td>
<td>0.057</td>
<td>0.079</td>
<td>0.005</td>
</tr>
<tr>
<td>VAS-P-VAS-P20</td>
<td>-0.559</td>
<td>0.267</td>
<td>0.267</td>
<td>0.040</td>
<td>0.469</td>
<td>0.0010</td>
<td>0.399</td>
<td>0.005</td>
</tr>
<tr>
<td>VAS-P-VAS-P30</td>
<td>-0.595</td>
<td>0.025</td>
<td>0.025</td>
<td>0.004</td>
<td>0.440</td>
<td>-0.046</td>
<td>0.004</td>
<td>0.0014</td>
</tr>
</tbody>
</table>

Notes: VAS-P-VAS-P0 before treatment; VAS-P-VAS-P10 at needle removal; VAS-P-VAS-P20 10 min after needle removal; VAS-P-VAS-P30 30 min after needle removal. Subgroup A: patients who received active acupuncture who experienced actual De Qi; subgroup C: patients who received minimal acupuncture who experienced actual De Qi; subgroup A+C: all patients who experienced actual De Qi, regardless of group allocation. r: correlation coefficient. P ≤ 0.05; P ≤ 0.01.
Choi et al.\textsuperscript{13,34} found that deep needling with bidirectional rotation results in a more marked increase in both De Qi sensation and pain threshold than deep needling without rotation or superficial needling; similar findings have been reported in other studies.\textsuperscript{18,30,43} Manipulation induces a stronger needle sensation through twining of the connective tissue by the needle, resulting in the stimulation of nerve fibers in muscles.\textsuperscript{42} Furthermore, deep needling with manipulation increases the blood flow velocity of skin and muscle compared with shallow needling without manipulation.\textsuperscript{41} As well as needling depth and manipulation, we considered the effect of needle thickness. A previous study found that a rougher needle surface produced a greater winding effect on the subcutaneous connective tissue and a stronger needle sensation.\textsuperscript{45} A thick needle exerts greater pressure on the surrounding tissue than a thin needle. Our study found that the quickness and duration of De Qi was affected by stimulus intensity. Deep needling with manipulation using thick needles (strong stimulation) induced quicker and longer lasting De Qi than shallow needling without manipulation using fine needles (weak stimulation).

The variation in the quickness and duration of De Qi might be related to nerve fibers. Research has found that Group II and Group IV fibers convey numbness and soreness, respectively, while Group III fibers are closely related to the conduction of the sensations of heaviness and distention.\textsuperscript{46} A previous study also found that De Qi is related to certain nerve fibers.\textsuperscript{48} De Qi is a kind of response of the organism to acupuncture stimulation that concerns the excitation thresholds of all levels of nerves, from the local sensation caused by needling to the sensation consciousness of central areas in the brain. Therefore, it is necessary to further study the mechanism of De Qi from the perspective of neuromechanism.

\textbf{Strengths and limitations}

From the perspective of TCM, the quickness of De Qi reflects the state of vital Qi, which can affect the treatment effect. Thus, acupuncturists could use the quickness of De Qi to infer the state of vital Qi and predict the treatment effect and prognosis, with a better effect achieved with a faster onset of De Qi. Conversely, the slow appearance of De Qi might achieve a weak efficacy. However, there is insufficient evidence from clinical studies to prove this theory. Our results provided some evidence for this long-held view and laid the foundation for further study regarding the influence of De Qi on clinical effect. Clinical efficacy can be affected by many factors. To avoid the influence of other factors except for De Qi on the treatment effect as much as possible, we chose to evaluate De Qi achieved during acupuncture performed at a single point for an uncomplicated disease with a fixed syndrome. However, it is challenging to avoid De Qi entirely. Although we used a fine needling technique similar to Japanese acupuncture to prevent De Qi in the non-De Qi group, the present study did not consider the precise detection of the meridians and acupoints, which is very important in Japanese acupuncture therapy. Our analysis found that 59.5% of patients in the non-De Qi group actually experienced De Qi, despite the use of thin needles and shallow needling. There are several possible reasons for this. First, no patients in our study had any experience of acupuncture, and so they might have been more sensitive to needling sensations. The second and possibly more important reason may be the acupoint sensitization phenomenon. Under pathological conditions, the related acupoints become more sensitive.\textsuperscript{49} Sanyinjiao (SP 6) has a close relationship with the uterus, as it is a dysmenorrhea-related point; thus, when the menstrual pain ensued, the sensitization of Sanyinjiao (SP 6) may have been reflected as changes in skin resistance or temperature.\textsuperscript{47,50} This might be one cause of the high rate of De Qi achieved even with gentle stimulation.

Another limitation is that the patients had to recall the needle sensation after acupuncture (retrospective recording of De Qi), which is very subjective. De Qi, originating from the \textit{Nei Jing}, is a central concept in traditional Chinese acupuncture. In the \textit{Nei Jing}, De Qi mainly refers to a response perceived by the administering acupuncturist. Subsequently, the description of De Qi gradually came to be defined as the sensations perceived by the patient receiving acupuncture. Irrespective of whether De Qi is felt by the acupuncturist and/or the patient, the evaluation of De Qi is subjective. In recent years, researchers have put more emphasis on the patient’s experience rather than the acupuncturist’s experience during needling, and the primary method used to evaluate De Qi is now based on scales or questionnaires. Commonly used scales or questionnaires include the Southampton Needle Sensation Questionnaire,\textsuperscript{51} the VAS,\textsuperscript{52} and the MGH Acupuncture Sensation Scale.\textsuperscript{11} It is well recognized that the objective evaluation of De Qi is essential but challenging. We previously showed that the latency of P60-N75 may reflect De Qi in healthy female volunteers,\textsuperscript{53} and changes in body temperature might be used as one of the objective indexes to judge the occurrence of De Qi. However, those objective measurement methods might only reflect De Qi from one aspect, and may not reveal the complete meaning of De Qi. A combined method of objective and subjective assessment of De Qi is needed.

In conclusion, when needling Sanyinjiao (SP 6) in PD patients with a cold and dampness stagnation pattern, a quicker onset of De Qi achieves a better therapeutic effect. However, the De Qi duration does not significantly enhance pain relief. Furthermore, active needle manipulation achieves a quicker onset and longer duration of De Qi compared with minimal acupuncture. Further research with a large sample is required to investigate the underlying mechanisms.
ACKNOWLEDGEMENTS

We would like to thank the research staff from Dongzhimen Hospital Affiliated to the Beijing University of Chinese Medicine. We are also grateful to the patients for their participation in this study.

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JTCM | www.journaltcm.com 265 April 15, 2019 | Volume 39 | Issue 2 |


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