Clinical Research

Effect of *Tuina* at the breasts on postpartum lactation

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ABSTRACT

**Objective** To explore the efficacy of *Tuina* for postpartum lactation and work out an optimal protocol involved. **Methods** With a randomized, controlled and clinical method, Eighty-four full-term primiparas were divided into a *Tuina* group (58 cases) and a control group (26 cases). While the patients in the control group received rooming in conventional nursing, those in the *Tuina* group were additionally treated with *Tuina*, including local manipulations at the breasts combined with acupoint manipulations. The colostrum time, lactation volume and serum prolactin were observed to make the comparisons between the two groups. **Results** The scores of lactation quantity after the 1st, 2nd, 3rd of the treatment were 1.660±0.785, 2.530±1.030, 2.880±1.171 in the *Tuina* group and 1.270±0.533, 1.460±0.811, 1.500±0.583 in the control group respectively, where there were significant differences in each time stage between the two groups (all P<0.001). The time of colostrum was (21.6±10.5) h in the *Tuina* group and (22.5±9.7) h in the control group, in which the difference was not statistically significant (P>0.05). The levels of prolactin were (314.35±110.37) ng/mL and (321.56±109.61) ng/mL in the *Tuina* group, (385.78±85.19) ng/mL and (340.12±103.10) ng/mL in the control group before and after treatment respectively, suggested that there were no significant difference (both P>0.05). **Conclusion** Postpartum *Tuina* at the breasts could increase the quantity of lactation and delay the decreasing of the levels of prolactin, which contributes primiparas to lactate more and sooner.

KEY WORDS: postpartum lactation; *Tuina*; prolactin; colostrum time; lactation volume

Postpartum hypogalactia refers to little or no milk secretion after delivery, failing to meet the need of breast feeding. It mostly occurs within 2–3 days or 15 days after delivery. Sometimes it may last for the whole lactation period[1]. Recently, the incidence of postpartum hypogalactia has increased year by year because of age increase of puerpera, rising of caesarean operation rate, imbalanced quality of nutrition and psychic trauma. Timely and effective treatment for postpartum hypogalactia patients after caesarean operation has great significance[2], especially for enhancing the increase of lactation during the first few days after delivery, relieving lactation deficiency and promoting the uterus repair. In comparison with 26 cases of hypogalactia patients receiving routine care, the author treated 58 cases of hypogalactia with *Tuina* and observed the influence of *Tuina* on postpartum lactation for the full-term primiparas. The report is as follows.

CLINICAL DATA

General data

All of 84 patients were from the Obstetrical Department of the Tenth Affiliated People’s Hospital of Shanghai Tongji University from December 2008 to July 2010. According to the computer random number method, they were divided into a *Tuina* group (58 cases) and a control group (26 cases). The comparison of the age did not present significant
difference between the two groups ($P>0.05$), indicating the comparability (Table 1).

<table>
<thead>
<tr>
<th>Groups</th>
<th>Observation</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>58</td>
<td>26</td>
</tr>
<tr>
<td>Youngest</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Oldest</td>
<td>37</td>
<td>34</td>
</tr>
<tr>
<td>Mean ($\pm s$)</td>
<td>29.1±2.7</td>
<td>28.6±3.4</td>
</tr>
</tbody>
</table>

### Inclusive criteria

- Primiparas aged in the range from 20 to 40 years; 
- 24 hours after delivery; 
- without any other kind of breast disease; 
- voluntarily taking part in the trial, having agreed with and signed the Informed Consent Form.

### Exclusive criteria

- Pluripara; 
- younger than 20 years old or older than 40 years old; 
- unable to complete the trial and being poor in compliance.

### METHODS

#### Tuina group

According to the national standard for *Location of acupoints* (GB12346-90) which was published by State Bureau of Technical Supervision in 1990, Zúsānli (ST 36), Sānıyíjiāo (SP 6), Dānzhōng (CV 17), Qīhū (ST 13), Kūfáng (ST 14), Wūyì (ST 15), Yīngchūāng (ST 16) and Rūgēn (ST 18) were located.

Patients in the *Tuina* group received rooming in routine nursing, baby early sucking and postnatal nutrition meal. At the same time, *Tuina* was applied 24 hours after delivery: 

- kneading manipulation was applied on Zúsānli (ST 36) and Sānıyíjiāo (SP 6) with the middle finger or kneaded and pressed with the thumb on Zúsānli (ST 36); 
- holding manipulation on the shoulder and kneading by the palm on the anterior part of the shoulder was performed; 
- kneading manipulation was applied on Dānzhōng (CV 17) with the thumb; 
- the basal portion of the breast was kneaded and pressed by the four fingers or the thenar. The technique was performed by moving the hands towards the areola; 
- kneading manipulation was applied on Qīhū (ST 13), Kūfáng (ST 14), Wūyì (ST 15), Yīngchūāng (ST 16) and Rūgēn (ST 18) with the four fingers; 
- pushing and kneading manipulation was applied on Rūgēn (ST 18) with the middle finger, then, this technique was performed on the lower and lateral part of the breast with the palmar of four fingers; 

#### Control group

Patients in the control group received rooming in routine nursing, baby early sucking and postnatal nutrition meal. Continuous observation was applied for 3 days.

### Observation indices

1. **Lactation volume:** estimate scoring method was applied. The regulation of scoring was: grade 3, enough lactation volume in 24 hours (8 times breast feeding per day and milk secretion meeting the infants’ demand); grade 2, general lactation volume (with 2 times breast feeding added); grade 1, not enough lactation volume (with water feeding added); grade 0, no lactation (milk substitute replaced breast milk). The integral evaluation of this trial was a comprehensive analysis of the scoring method above and milking capacity. 0–30 mL milking capacity was equal to once breast feeding; 30–60 mL milking capacity was to twice breast feeding; 60–90 mL milking capacity was to 3 times breast feeding; 90–120 mL milking capacity was to 4 times breast feeding; 120–150 mL milking capacity was to 5 times breast feeding; 150–180 mL milking capacity was to 6 times breast feeding.

2. **Colostrum time:** it was the duration from the delivery of fetus and placenta to the first lactation.

3. **Prolactin:** blood was collected at 8:00 a.m. before and after treatment. Prolactin level was determined by the radioimmunoassay.

### Statistical analysis

SPSS 11.5 software package was used for statistical analysis. The measurement data were expressed with means± standard deviation ($\overline{x} \pm s$). Two-independent sample *t*-test was used for the comparison between groups. The paired *t*-test was used for the comparison before and after treatment ($\alpha=0.05$). The treatment was carried out by the professionals of this trial, who didn’t know anything about the grouping of the patients and did not take part in the evaluation of curative effect.
RESULTS

Comparison of the scores of lactation volume in each time stage after treatment between the two groups

The scores of lactation volume after the 1st, 2nd, 3rd treatments in the Tuina group were remarkably higher than those in the control group (all \( P<0.001 \)). See Table 2.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Patients</th>
<th>After the first treatment</th>
<th>After the second treatment</th>
<th>After the third treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>58</td>
<td>1.660±0.785</td>
<td>2.530±1.030</td>
<td>2.880±1.171</td>
</tr>
<tr>
<td>Control</td>
<td>26</td>
<td>1.270±0.533</td>
<td>1.460±0.811</td>
<td>1.500±0.583</td>
</tr>
</tbody>
</table>

Notes: compared with the control group at the same time point, after the first treatment=2.628, after 2nd treatment=5.138, after 3rd treatment=7.198, \( P<0.001 \).

Comparison of the colostrum time between the two groups

The time of colostrum was \((21.6±10.5)\) h in the Tuina group and \((22.5±9.7)\) h in the control group, in which the difference was not statistically significant \(( P>0.05 )\).

Comparison of the levels of prolactin between the two groups

Compared with those before treatment, the levels of prolactin in the Tuina group after treatment have increased, but still showing no significant difference \(( P>0.05 )\). Compared with those before treatment, the levels of prolactin in the control group after treatment have decreased, suggesting no significant differences \(( P>0.05 )\). See Table 3.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Patients</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>47</td>
<td>314.35±110.37</td>
<td>321.56±109.61</td>
</tr>
<tr>
<td>Control</td>
<td>21</td>
<td>385.78±85.19</td>
<td>340.12±103.10</td>
</tr>
</tbody>
</table>

Notes: the number of the patients from this table was actual acquisition cases.

DISCUSSION

Early records of promoting postpartum lactation by Tuina can be found in Chinese Medicine history. Ningkunmiji: Shangjuan: Dahuanggaofang ernel records that “with treatments of postpartum hypogalactia——breast feeding can be applied any time when needed. The breasts should be kneaded for several times. Then, the milk will come out spontaneously.” Zhengzhizhunsheng: Nûke ernel records that “postpartum hypogalactia is mainly due to improper baby sucking. This may also cause retarded lactation. As a result, a lump will appear due to stagnation of milk. Sometimes, this lump may accompany with pain, while sometimes not. If treatment is not given in time, patient may suffer from mastitis or even die in serious case. The patient should orally take Zaojiao powder (Fructus Trichosanthis) or Gualou (Fructus Bombycis) and Tuina (Rhizoma Arisaematis) powder. It is external applied at the breasts. Then kneading is done at the breast.” Gezhiyulan: Ruyinglun ernel records that the lump dissipating. It is reported both in Rumenshiqin (The Scholars’ Care of Their Parents) and Liyuepiamwen (A Rhymed Discourse on New Therapeutics) that the doctor should combing the breasts with wooden comb to treat this problem. It indicates that Tuina has definite effect on postpartum hypogalactia. Many clinical trial literatures also show that Tuina can promote lactation. But those literatures mainly focus on efficiency reports. Most of the trials are not rigorous randomized controlled clinical studies. Observation indices are lack of variety and out-of-date. Modern detection means are not widely used in the trials. The Tuina manipulations are not uniform. There are very few of standardized clinical trials. Thus, our research carried on with a standardized research method and unified manipulation.

The difficulty of this trial was case collecting of the control group and collection of blood. At last, 58 patients took part in the Tuina group, while, only 26 patients joined the control group. The comparison of the age did not present significant difference between the two groups. Other indices were comparable. The indices of lactation volume and colostrum time were relatively complete, while some
prolactin indices were missed. Finally, 47 cases of prolactin indices in the Tuina group and 21 cases in control group were collected. These data were sufficient to explain the effect of Tuina on postpartum lactation.

Lactation volume is one of the most visual indicators. The scores of lactation volume after the 1st, 2nd, 3rd treatments in the Tuina group were remarkably higher than those in the control group. With the enhancement of Tuina, this difference was increased, which indicated that Tuina can significantly increase maternal lactation volume. The time of colostrum in the Tuina group was shorter than that in the control group. The difference was not statistically significant ($P>0.05$). It was same as the earlier period research result.[11]. There was no specific effect of Tuina on colostrum time. Due to the pulsatile secretion of prolactin[12], the collection time of prolactin was strictly controlled so as to unify the collection time of the same patient. Additionally, the individual differences could be avoided in the comparison of prolactin data for the same puerpera before and after treatment. The result showed that there was an increasing of prolactin in the Tuina group after 3 days treatment, while the prolactin in the control group began to decrease after the treatment. This showed that Tuina could effectively delay the descent speed of prolactin. With the help of Tuina, the prolactin and lactation volume of puerpera could maintain a high level for a long time after delivery.

Hence, the standardized Tuina at the breast after delivery can significantly increase lactation volume and effectively delay the descent speed of prolactin. It is conducive to early lactation. It can also effectively relieve postpartum breast distension and pain. It is worth to be popularized in obstetrics and postnatal related service centers.

REFERENCES


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