Clinical observation on regulating the three energizer by acupoint catgut embedding combined with abdominal acupuncture in treating abdominal obesity: a randomized controlled trial

DENG Li-juan, LUN Zhi-jian, MA Xiao-wei, ZHOU Jun-liang

1. Department of TCM, Nanhai Women's and Children’s Hospital Affiliated to Guangzhou University of CM, Foshan 528200, China; 2. Cancer Center of Sun Yat-Sen University (1. 2. Guangzhou University of Chinese Medicine, Foshan 528200, China)

ARTICLE INFO

First author: Deng Li-juan (1979-), female, associate chief physician. Research field: health care of TCM. E-mail: deng_lijuan@126.com Accepted on April 20, 2014

ABSTRACT

Objective To observe the clinical effect of acupoint catgut embedding combined with abdominal acupuncture for treatment of abdominal obesity under the theoretical guidance of regulating the three energizer. Methods One hundred and twenty patients were randomly divided into acupoint catgut embedding group (group A), abdominal acupuncture group (group B), acupoint catgut embedding combined with abdominal acupuncture group (group C) and blank control group (group D) based on blocked random method, with 30 cases each; the first three groups based on the principle of regulating three energizer were respectively given acupoint catgut embedding at Zhōngwān (CV 12), Tiānshū (ST 25), Yinjǐāo (CV 7), Zǐgū (TE 6), Guānyuán (CV 4), Zǔsānli (ST 36) with catgut embedding once every 7 days, three times for each course of treatment, abdominal acupuncture once every 3 days, seven times for each course of treatment. Results The therapeutic effect of each group after treatment was respectively 46.7% (14/30), 43.3% (13/30), 76.7% (23/30) and 26.7% (8/30), with statistically significant difference. For comparison of waist circumference difference, there was no statistical significance between acupoint catgut embedding combined with abdominal acupuncture and acupoint catgut embedding group (P=0.54), and for comparison of weight difference, there was statistical significance in terms of therapeutic effect between acupoint catgut embedding combined with abdominal acupuncture and A, B, D groups (4.49±0.59 vs 2.64±0.53, 2.87±0.44, 1.45±0.26, all P<0.05). Conclusion Acupoint catgut embedding combined with abdominal acupuncture had the best effect in terms of total effective rate for treatment of abdominal obesity, equivalent therapeutic effect to simple acupoint catgut embedding in terms of waist circumference reduction, and the best therapeutic effect in terms of weight reduction.

KEY WORDS: obesity; catgut embedding; abdominal acupuncture; randomized controlled trial (RCT)

Abdominal obesity means the fat mainly stores in the belly or the abdominal viscera, and is closely related to the metabolic syndrome, type II diabetes, hypertension and coronary heart disease, etc. The
authors adopted regulating the three energizer by acupoint catgut embedding combining with abdominal acupuncture for treatment of abdominal obesity, and the results are reported as follows.

**CLINICAL DATA**

**General data**

There were 120 patients with abdominal obesity in the Outpatient of Affiliated Nanhai Women's and Children's Hospital of Guangzhou University of CM from August 2012 to August 2013. They were divided based on blocked random method into acupoint catgut embedding group (group A), abdominal acupuncture group (group B), acupoint catgut embedding combined with abdominal acupuncture group (group C), and blank control group (group D), with 30 cases each. See Table 1 for general data. All groups were subject to examination by the Ethics Committee. It is indicated that there was no statistically significant difference, and there was comparability in terms of gender, age, course of disease, abdominal perimeter and weight of all groups before treatment ($P>0.05$).

**Diagnostic criteria**

① According to the Guidelines for Prevention and Control of Overweight and Obesity in Chinese Adults issued by Disease Control Department of Health Ministry of the People's Republic of China [2] in 2006, the diagnostic criteria are: male waist circumference (WC) ≥ 85 cm, female WC ≥ 80 cm; ② Standard male weight (kg) = [height (cm)−100] × 0.9; standard female weight (kg) = [height (cm)−100] × 0.85; obesity degree = (actual weight − standard weight)/standard weight × 100%. Mild obesity is lower than 30%, moderate obesity is between 31% and 50%, and severe obesity is higher than 51%.

**Inclusive criteria**

① Those who conformed to the diagnostic criteria; ② those who were aged between 20–60 years old; ③ those who were willing to sign the Informed Consent Form.

**Exclusion criteria**

① Secondary obese patients: hypothalamus syndrome, pituitary tumor, cushing syndrome, hypothyroidism and hypogonadism, polycystic ovary, water retention obesity, etc. ② those who were taking diet pills, going on a diet or kinesitherapy, etc.; ③ those who did not receive required treatment and the therapeutic effect was unable to be judged or whose data were incomplete, or who were under other conditions affecting evaluation of therapeutic effect or safety; ④ those with physical scars, allergic constitution, severe diabetes, heart disease, bleeding tendency and not suitable for acupoint catgut embedding; ⑤ women during pregnancy or lactation.

**METHODS**

**Acupoint catgut embedding group (group A)**

Based on the principle of regulating the three energizer, Zhōngwān (中脘 CV 12), Tiānshū (天枢 ST 25), Yínjiāo (阴交 CV 7), Zhīgōu (支沟 TE 6), Guānyuān (关元 CV 4) and Zūsānlimǐ (足三里 ST 36) were selected. The acupoints were further divided into three pairs: CV 12 and CV 7, ST 25 and CV 4, TE 6 and ST 36; each pair was subject to acupoint catgut embedding in turn, once every 7 days, three times for each course of treatment, with an interval of 3 days after each course, and 3 courses in total.

**Operation:** the patient was asked to keep in horizontal position in the treatment bed, with the selected skin exposed for routine sterilization by 2.5% iodine, and deiodination by 75% alcohol. After washing hands and disinfecting, the doctor cut off the head of a 2 cun sterile filiform needle with the disinfected spare surgical scissor as the needle core, took a No. 8 syringe needle as the cannula, and then threaded a filiform needle into the end of the syringe needle, with the catgut not beyond the needle head preferred. The syringe needle was held with the
right hand, while the skin at the acupoints was propped open with the index finger and middle finger of the left hand. The needle was slowly inserted after piercing the skin at the acupoints rapidly. The needle core was pushed and the cannula was withdrawn simultaneously after the needling sensation was felt, then the catgut was embedded into the acupoint. After withdrawing the needle, the needle hole was firstly pressed for a moment with a cotton swab, and then stuck with clean surgical dressing.

Requirements: The needle hole should kept away from water within 24 hours after acupoint catgut embedding to prevent infection; 2 days after catgut embedding, the patient should massage the acupoint subjected to catgut embedding for 15 minutes daily before sleep; try not to eat spicy, hot and dry food during catgut embedding period.

Abdominal acupuncture group (group B)

Acupoints selection: drawing qi to the origin [CV 12 with M depth, Xiānwān (下脘 CV 10) with D depth, Qīhāi (気海 CV 6) with D depth, CV 4 with D depth], four abdominal joints [Huárōmén (滑肉門 ST 24) of both sides with M depth, Wāiling (外陵 ST 26) with M depth], ST 25 and Dāhēng (大橫 SP 15) of both sides were added with D depth. M refers to medium acupuncture depth, about 3–4.5 cm of needle inserting, and D refers to deep acupuncture, about 4.5–6 cm of needle inserting.

Operation: a disposable 1.5 cun filiform needle was inserted while the pores and vessels were avoided. During operation, being gentle and slow was required. Generally, the method of twirling instead of lifting and thrusting or gentle twirling and slow lifting and thrusting was adopted to avoid injury to the viscera. The needle was remained for 30 minutes. Acupuncture was given once every 3 days, seven times for each course of treatment, with an interval of 3 days after each course, and 3 courses of treatment in total.

Acupoint catgut embedding combined with abdominal acupuncture group (group C)

The operation and course of treatment of acupoint catgut embedding therapy were the same as the above two groups. In addition, shallow acupuncture was given after embedding at CV 12 (embedding points were avoided), around 2 cm in depth.

Patients of the above three groups were required to control their diet at the same time during treatment, and the ways were the same as the group D.

Blank control group (group D)

Only diet control was required without any other intervention. And the method was as follows:

First, three meals a day was ensured and a regular feeding schedule was kept, which means that the patients were asked to have breakfast, and to have lunch before two o’clock in the afternoon, and not to eat 2 hours before sleep. Any snacks, drinks, fried food were prohibited. They were encouraged to eat high-fiber carbohydrates such as apple, apricot, pear, pineapple, asparagus, mung beans, lentils, sweet potato, oatmeal, bread (preferably whole wheat bread), buckwheat, corn, etc. to prevent fat absorption and food helping burning fat, such as eggs or egg products, lean meat, skim milk, skim or low-fat cheese, tofu or soy products, etc.

Therapeutic effect indices

The body weight and abdominal circumference were measured after each course of treatment.

Therapeutic effect criteria

Based on the Criteria of Therapeutic effect for Obesity (3) developed by International Federation of Integrated Traditional And Western Medicine in 1992: markedly effective: weight loss is more than 5 kg or average abdominal circumference reduction is more than 10 cm; effective: weight loss is 2–5 kg or average abdominal perimeter reduction is 3–10 cm; ineffective: weight loss is less than 2 kg or average abdominal circumference reduction is less than 3 cm.

Statistical method

All the data were expressed with mean± standard deviation (x±s). t-test and chi-square test were used for statistical analysis. And SPSS15.0 was adopted to perform statistical process, P<0.05 indicated statistically significant difference.

RESULTS

Table 2 showed that, after treatment, the indices such as abdominal circumference and weight were significantly improved in each group comparing with the conditions before treatment, which indicated that all those treatment methods could significantly improve obesity indices (abdominal circumference and body weight), with a good effect.

Table 3 indicated that there was difference among four groups in the effect of abdominal circumference reduction and weight loss. By inter-group comparison, group C and group A showed considerable effect in
reducing abdominal circumference, which was greater than that of group B and group D; and group C showed better effect than the other groups in terms of reducing weight.

As shown in Table 4, the total efficacy comparison of the four groups had a significant difference, the effect in group C was better than the other group.

### DISCUSSION

Modern medicine treats abdominal obesity as a kind of metabolic disease [4]. From the point of traditional Chinese medicine, abdominal obesity is not a kind of acute disease, the formation of which should be considered from the whole body substance and energy metabolism, and not limited to a certain internal organ. Long-term clinical practice shows that most patients with abdominal obesity have complex etiology and varied symptoms, so the complicated syndrome is not formed with one internal organ disorder but caused by three energizer disorder, and by function discordance among internal organs such as lung, spleen, liver and kidney, etc. Among them, the lung belongs to upper-energizer, hosts climatic qi, and lowers qi function section to regulate the body fluid, so that it can flow smoothly in the three energizer and meridians, promoting metabolism and preventing the formation of phlegm. Spleen and liver belong to middle-energizer. Spleen hosts transport of moisture, and liver controls dispersion of stagnant fluid movement and form phlegm. The three energizer is one of the viscera, which plays a very important role in human life movement. Therefore, the theory that regulating the upper-energizer, middle-energizer and lower-energizer simultaneously based on the theory in regulating the three energizer can realize integrated regulation and overall governance, so as to regain vitality and clear heat and phlegm, which is easy to achieve clinical effect. The upper-energizer is regulated at Dānzhōng (CV 17) for depurative downbearing. Middle-energizer is regulated at ST 25, Shuffling (水分 CV 9), and ST 25 belongs to the foot-yangming stomach meridian, is the front point of large intestine meridian, in the lower abdomen boundaries, regulating up and down, is the focal hub of qi function at middle-energizer, which can invigorate the spleen and the stomach, and purge intestine, regulate menstruation, and enhance blood circulation; CV 9 locates one cun above umbilicus,
the depth of which is small intestine. Small intestine has close relations with spleen and stomach, with function of separating the clear and excreting the turbid, as well as warm and activate water-dampness; CV 12 is the front-mu point of Stomach, but also the influential point of jue-organs, with the function of tonifying spleen and stomach, regulating the flow of vital energy and calming the adverse-rising energy as well as improving digestion. CV 7 could be selected for regulating the lower-energizer and menstruation, alleviating edema, and tonifying the lower-energizer. Féishù (肺俞 BL 13), Pishū (脾俞 BL 20), Shénshù (腎俞 BL 23) and Sānjīāoshù (三焦俞 BL 22) belong to back-shu acupoints, corresponding to upper-energizer, middle-energizer and lower-energizer. These acupoints could be selected at the same time, which could tonify the vitality, smooth the three energizers, recover viscera functions; if water metabolism is normal, turbid grease is eliminated, weight is reduced and waist circumference is declined, and then the abdominal obesity is controlled. Moreover, during the treatment of some patients with abdominal obesity at the above acupoints, their stomach trouble is improved, and irregular menstruation and frequent urination are cured, which are the results of the synchronic regulation on three energizer and comprehensive regulation on viscera.

Abdominal acupuncture therapy is a therapy method that is invented by Bo Zhi-yun, with Shénqì (神阙 CV 8) regulation system as the core, aiming at treating systemic diseases through the acupuncture on the abdominal acupoints. The matching acupuncture mechanism of “Draw qi to the origin” for abdominal acupuncture is: CV 12 and CV 10 belong to gastric cavity. These two acupoints could regulate middle-energizer and qi movement, and the hand-taiyin lung meridian starts from the abdomen-energizer, so the acupoints could host the depurative downbearing of lung qi. CV 6 is the sea of qi, CV 4 nourishes kidney and strengthens the body, kidney hosts the original vitality, so the combination of four acupoints has the effect of “acquired nurture raises congenital nature”, so the mechanism is called “Draw qi to the origin”. The four abdominal joints could regulate the qi and blood and remove stasis of meridian qi to make qi and blood reach the end part of body, so they are perfect acupoints to draw qi from viscera to the whole body. The therapy is used clinically to treat systemic diseases. When the therapy is used to draw qi to the origin, it could dredge the bowels. The two SP 15 acupoints on left and right constitute the recipe for “regulating temperament”, with the function of regulating spleen, clear dampness and tonify spleen. ST 25 regulates the qi function of middle-energizer, reduces the turbid and clear the hollow viscera. Besides, SP 15 and ST 25 on the left side are within the region of “zhengua” (腎俞) in the eight regions for abdominal acupuncture, they could regulate the qi function of liver and gallbladder, while SP 15 and ST 25 on the right side are within the region of “duigua” (兌俞), they could regulate lung and large intestine. The acupoints for abdominal acupuncture could coordinate each other to tonify spleen and kidney, benefit the vitality, smooth liver and regulate lung, thoroughly regulate the qi function of the whole body, remove dampness, dissolve phlegm and remove grease, with the whole concept similar to the regulation of the three energizers.

Both acupoint catgut embedding and abdominal acupuncture could treat abdominal obesity, and the acupoint catgut embedding could have the same therapeutic effect in reducing abdominal circumference through combining abdominal acupuncture as the simple acupoint catgut embedding, but the effect in the combination for lowering weight is better than that of simple acupoint catgut embedding or abdominal acupuncture, and for the general therapeutic effect, the therapy in the combination achieves the best effect. The reason for the results may be the abdominal fat accumulation due to the obstruction of three energizer or declining vitality, weak spleen and stomach, inferior digestion, inner phlegm-dampness. The Lingshu: Zhongshi Pian (《灵枢·终始篇》Miraculous Pivot: Ending and Beginning): “The patients suffering for a long period have deep pathogenic qi, so the needle should be inserted deeply and remained for a longer time”, the acupoint catgut embedding therapy is just inspired by the therapy. As a combination therapy, its function mechanism includes the acupuncture effect, considering reinforcing and reducing in deficiency and excess during the catgut embedding. Therefore, the catgut embedding could regulate qi and blood, remove phlegm, clear grease and strengthen the therapeutic effect of reducing weight and waist circumference in the combination with abdominal acupuncture. In the clinical treatment, physicians could flexibly choose the therapy method based on the actual conditions of patients.

REFERENCES

ABSTRACT IN CHINESE

目的：观察采用调三焦理论指导下的穴位埋线疗法结合腹针治疗腹型肥胖症的临床疗效。方法：将120例腹型肥胖症患者用区组随机法分为穴位埋线组（A组）30例，腹针组（B组）30例，穴位埋线结合腹针组（C组）30例、空白对照组（D组）30例，前3组以调治三焦为原则，选中脘、天枢、阴交、支沟、关元、足三里穴，采用穴位埋线每7 d埋线1次，连续3次为1个疗程（A组）；腹针每3 d针刺1次，7次为1个疗程（B组）；两者结合方法治疗（C组）。结果：治疗后各组总有效率分别为46.7%、43.3%、76.7%、26.7%，差异具有统计学意义。腰围差值比较，穴位埋线结合腹针与穴位埋线比较P=0.54，无统计学意义，体质量差值比较，穴位埋线结合腹针与A、B、D组分别为4.49±0.59 vs 2.64±0.53，2.87±0.44，1.45±0.26，均P<0.05，差异有统计学意义。结论：穴位埋线结合腹针在治疗腹型肥胖总有效率方面效果最佳，在减少腰围方面与单纯穴位埋线疗效相当，降低体重方面疗效最佳。

【关键词】 肥胖  埋线  腹针  随机对照试验
学霸图书馆

www.xuebalib.com

本文献由“学霸图书馆-文献云下载”收集自网络，仅供学习交流使用。

学霸图书馆（www.xuebalib.com）是一个“整合众多图书馆数据库资源，
提供一站式文献检索和下载服务”的24小时在线不限IP图书馆。

图书馆致力于便利、促进学习与科研，提供最强文献下载服务。

图书馆导航：

图书馆首页  文献云下载  图书馆入口  外文数据库大全  疑难文献辅助工具