Clinical Observation of 30 Cases of Insomnia Treated with "LV's Umbilicus Moxibustion"

Peng Jia [1], Kunpeng Xia [2] and Yu'e Lv [3*]

[1] Shanxi University of Traditional Chinese Medicine, Taiyuan 030024, China
[2] Tokyo Waseda Foreign Language School, Tokyo, Japan
[3] Third Hospital of Traditional Chinese Medicine of Shanxi University of Traditional Chinese Medicine, Taiyuan, China
Email: shanxitengtong1@126.com

Abstract: This research is to select 30 cases of insomniac patients treated with "LV's Umbilicus Moxibustion" from the outpatient department of our hospital from June 2017 to September 2018, which aims to explore the therapeutic effect of "LV's Umbilicus Moxibustion" on insomnia. Through mathematical analysis of their data we got the minimum value of the augmenter of the length of total sleep recorded by MI Band Wristband before and after treatment was -0.17 hours, the maximum value was 5.17 hours, and the average was (2.54 ± 1.18) hours; the minimum value of the augmenter of the length of deep sleep recorded by MI Band Wristband before and after treatment was -6.00 minutes, and the maximum value was 88.00 minutes, and the average was (39.30 ± 21.57) minutes; the minimum value of the PSQI Reductive Ratio was 6.25%, the maximum value was 81.25%, and the average was (57.36% ± 16.29%). And it proves that the "LV's Umbilicus Moxibustion" has shown good curative effect in the treatment of insomnia in clinical applications, so it is worthy of clinical trials to discuss its clinical efficacy.

***Keywords*:** insomnia, LV's Umbilicus Moxibustion, traditional Chinese medicine, ShenQUE (CV.8), Governor Vessel (GV.), Du meridians

Insomnia is a common physiological and psychological condition that makes people hard to fall or stay asleep, and long-term lack of sleep can lead to serious adverse impact during the day. The people who get insomnia may also be moody, clumsy, depressed, or have headaches. It brings great menace to human health that the incidence of insomnia increases day and day in modern age. This study brings a new treatment calls "LV's Umbilicus Moxibustion" based on the theory of Prof. LV Jing-shan who is a master of Chinese Medicine. As a characteristic therapy combining traditional Chinese medicine, moxibustion and acupoint therapy to treat insomnia, it avoids the disadvantages of traditional moxibustion directly acting on human skin, which causes great pain to patients, and therefore can bring comfortable treatment feeling and painless treatment experience to patients, strengthen the compliance of patients to make the treatment course full and the curative effect enhanced, and is expected to innovate the clinical treatment ideas. So, we aim to explore the therapeutic effect of "LV's Umbilicus Moxibustion" on insomnia by collecting 30 cases of insomniac patients treated with "LV's Umbilicus Moxibustion" in the outpatient department of our hospital and conclude through mathematical analysis, and we make a hypothesis that "LV's Umbilicus Moxibustion" do have the therapeutic effect on insomnia. It is worth carrying out double-blind control experiment, further analysis of the "LV's umbilicus Moxibustion" for the significance of the effect of insomnia based on the significance test if the result shows the hypothesis is right.

1. "LV's Umbilicus Moxibustion"

1.1 Brief introduction

Our hospital that the Second department of Acupuncture and Moxibustion of the Third Hospital of the Traditional Chinese Medicine of the Shanxi University of the Traditional Chinese Medicine has always used "LV's Umbilicus Moxibustion" with "Anmian prescription" that a special therapy and a special prescription of Prof. LV Jing-shan, a Chinese medicine master, based on the theory of traditional Chinese medicine, which is to adjust the balance of Yin and Yang in the human body and treat diseases by using moxibustion on the umbilicus filled with herbal drugs for insomnia and received positive feedback.

1.2 Therapeutic mechanism

1.2.1 The function of meridians and collaterals conduction:

According to the traditional Chinese Medicine theory, the meridians and collaterals of the human body are an

important part of the human body's organizational structure. ShenQUE (CV.8) is located in the anterior midline of the human body, which is an important acupoint of Conception Vessel (CV.) Ren meridians, the one which regulates Yin and Yang of human body together with Governor Vessel (GV.) Du meridians in traditional Chinese Medicine theory and Ancient Chinese Philosophy theory. In addition, the Stomach Channel of Foot-Yangming, the meridian of Foot-Taiyin, and the hand-Shaoyin are through the umbilicus. This shows that the location of ShenQUE (CV.8) can be said to be the hinge of human meridians.[1]

The mechanism of treatment is that the corresponding herbal drugs act on the umbilicus by fill ShenQUE (CV.8) with "Anmian prescription", which can not only play the role of acupoint stimulation, but also conduct the efficacy conduction through meridians and collaterals, so as to give full play to the efficacy of herbal drugs. To sum up, the therapy can effectively regulate the Yin and Yang and blood of the body and make the imbalance state of the body tend to balance in the system of traditional Chinese Medicine. In a word, it can be used to treat insomnia caused by the imbalance of Yin -Yang and Qi-blood.

1.2.2 The function of neuroregulation:

Modern medical research has shown that the acupoints and meridians of the human body are closely related to nerve endings, nerve tracts, and ganglia.[2] The disease of insomnia is also related to the regulation of nervous system and neuroendocrine substances [3] "LV's Umbilicus Moxibustion" can not only regulate the nervous system of the human body through moxibustion, improve the secretion of neuroendocrine substances[4], but also make patients absorb the pair herbal drugs such as row Semen Ziziphi Spinosae and ripe Semen Ziziphi Spinosae through the umbilicus to ameliorate the function of the regulation of the nervous system of the human body[5].

1.2.3 The immune function

According to the Traditional Chinese Medicine theory, the main pathogenesis of insomnia is the imbalance of Yin and Yang and the loss of nutrition. Modern medicine believes that insomnia is related to the imbalance of human immune system, and long-term insomnia will also lead to the decline of immune function.[6] The treatment mechanism of "LV's Umbilicus" Moxibustion consists in stimulating the skin of the umbilicus by the herbal drug, then through the body's nerve reflexes to stimulate the body's ability to regulate, thereby enhancing the body's immune function and playing a preventive and therapeutic role during the treatment.

1.2.4 The function of the herbal drug itself

Umbilicus moxibustion belongs to external treatment. Although the way and method of administration are different from internal treatment, the principle of its treatment is the same. "LV's Umbilicus Moxibustion" is from the experiential prescription of insomnia by Prof. LV Jing-shan' s " No.1 Anmian Prescription", a successful example of Professor LV Jing-shan' s academic thought which exerts the "Shi Jin-mo' s Pair Herbal drugs" theory. This prescription uses row Semen Ziziphi Spinosae and ripe Semen Ziziphi Spinosae, Polygoni Multiflori Caulis, Spica Prunellae, Pinelliae Rhizoma, Polygalae Radix, Rhizoma Acori Tatarinowii, etc. It can be said that "Anmian prescription" is the key point to improve the efficacy of "LV's Umbilicus Moxibustion" in the treatment of insomnia.[7]It can be said that "Anmian prescription" is the key point to improve the efficacy of "LV's Umbilicus Moxibustion" in the treatment of insomnia.

1.3 Operation process

1.3.1 Appliance preparation

Special herbal drugs for "LV's Umbilicus Moxibustion" (base on LV's Anmian Prescription), halite, treatment trolley, moxa stick, moxa-stick-box, lighter, etc.

1.3.2 Operation steps

① Prepare the special herbal drug for "Anmian Prescription" (the herbal drugs are grounded into powder). Take 3-5g for each operation and put it into the filter paper bag. ② Close the doors and windows, let the patient take the supine position to expose the abdomen, and pay attention to keep the patient warm. ③ Make flour circle (diameter 10-12cm, inner diameter 2-3cm, height 0.8-1.2cm). ④ Clean the umbilicus of the patient, center the flour circle on the umbilicus and place it on the umbilicus. ⑤ Place the filter paper bag containing "Anmian Prescription" in the flour circle, pour sterile water for injection, and put 3g halite. ⑥ Light the moxa stick, put it into the moxa-stick-box, and place the moxa-stick-box on the treatment area. ⑦ The treatment time is 120 minutes. After the treatment, remove the moxa-stick-box. ⑧ Clean the treatment area with disposable sterile gauze, and assist the patient to dress after resting for 10-20 minutes.

1.3.3 Treatment course

6 times a week; 4 weeks as a course of treatment.

2. Basic information and data of patients

We selected 30 cases of insomnia used "LV's umbilicus moxibustion" from June 2017 to September 2018 in our outpatient department for research and analysis. Among them, 12 male patients and 18 female patients were selected. The minimum age was 14 years old, the maximum age was 70 years old, the average age was (45.70 ± 13.83) years old; the shortest course of disease was 1 month, the longest course of disease was 20 years, the average course of disease was (3.65 ± 4.87) years.

3. Record and analyze the length of sleep and the PSQI score

The clinical manifestations of insomnia are mainly reflected in the lack of sleep time, and the deep sleep is the most important part of human sleep relaxation [8,9].

So Mi Band Wristband was used by us to record the total sleep time and deep sleep time of patients before and after treatment[10]. The patients were instructed to wear Mi Band Wristband one night before the treatment and the night of the end of the treatment, and the difference of total sleep duration and deep sleep duration before and after the treatment was calculated as the basis of objective evaluation of sleep improvement. Calculation method: the augmenter of the length of sleep recorded by MI Band Wristband before and after treatment (Δ) = [the length of sleep recorded by Mi Band Wristband after treatment (Post-Length of Sleep)] – [the length of sleep recorded by Mi Band before treatment (Pre-Length of Sleep)]

At the same time, we used the Pittsburgh Sleep Quality Index (PSQI) on the day before the start of the treatment and the day of the end of the treatment in order to evaluate the improvement of sleep quality of patients before and after treatment[11-13].And the PSQI Reductive Ratio of "LV's Umbilicus Moxibustion" was calculated to subjectively analyze and analyze the changes in the patient's sleep quality before and after treatment. PSQI Reductive Ratio = [(Pre-PSQI score) – (Post-PSQI score) / (Pre-PSQI score] × 100%.

The data of each project is shown in the table below.

Table 1. Datas of every project before and after treatment

project	minimum value	maximum value	average
Pre-[length of total sleep] / h	1.5	5	3.50 ± 0.99
Pre-[length of deep sleep] / min	19	75	47.48 ± 16.11
Pre-PSQI	13	17	14.50 ± 1.14
Post-[length of total sleep] / h	2.84	7.67	6.05 ± 1.19
Post-[length of deep sleep] / min	34	115	86.78 ±21.21
Post-PSQI	3	15	6.20 ± 2.57
Δ-[length of total sleep] / h	-0.17	5.17	2.54 ± 1.18
Δ-[length of deep sleep] / min	-6	88	39.30 ± 21.57
PSQI Reductive Ratio	6.25%	81.25%	57.36% ± 16.29%

According to the data in the table, it can be concluded that "LV's Umbilicus Moxibustion" can not only effectively prolong the total sleep and deep sleep time of patients with insomnia, but also effectively improve and treat the sleep quality of patients.

4. Conclusion and discussion

Through the data analysis of 30 cases of insomnia treated by “LV’s Umbilicus Moxibustion” and combined with the treatment effect of "LV's Umbilicus Moxibustion" in the past, "LV's Umbilicus Moxibustion" has a good effect on insomnia, so it is worth carrying out double-blind control experiment. Based on the statistical point of view, further analysis of the "LV's umbilicus Moxibustion" for the significant effect of insomnia.

In this experiment, there are still some shortcomings, that is, in terms of patients’ medical expenses, our hospital did not use PSG instead of MI Band Wristband to measure the length of sleep. However, some experiments have also proposed that the accuracy of sleep duration measured by intelligent bracelet is not high [14],so in further experiments, we can use experimental funds to match patients with PSG equipment to measure sleep duration, making the experiment more rigorous.

References

[1] Wang Hongbo. 45 cases of insomnia treated with act moxibustion on ShenQUE (CV.8). *Chinese Community Doctors*. 2012; 14(16): 219.

[2] Xu Jinsen. Present situation and prospect of meridian research. *China Journal of Traditional Chinese Medicine and Pharmacy*. 2016; 31(11): 4355-4360.

[3] He Jingwen, Tu Zhihao, Su Tong, et al. Insomnia: the characteristics and mechanisms of cognitive impairment. *Academic Journal of Second Military Medical University*. 2019; 40 (9):1015-1019.

[4] Xu Huanfang, Zhao Baixiao. Brief introduction of the mechanism of moxibustion. *Shanghai Journal of Acupuncture and Moxibustion*. 2012; 31(1): 6-9.

[5] Du Chenhui, Cui Xiaofang, Pei Xiangping, et al. Research progress on Ziziphi Spinosae Semen saponins and its biological action on nervous system. *Chinese Traditional and Herbal Drugs*. 2019; 50(5): 1258-1268.

[6] Qi Xianghua. The theory and clinical study of the insomnia's condition that "listless in the day and cannot sleep in the night". *Journal of Shandong University of Traditional Chinese Medicine*. 2005; 29(2): 130-133.

[7] Lv Yu'e. Clinical Observation of 59 Cases of Insomnia Treated with "Shi Jinmo's Pair Herbs" and "Lv Jingshan's Pair Points". *World Journal of Integrated Tragditional and Western Medicine*. 2013; 8(7): 714-716.

[8] Zhang Peng, Zhao Zhongxin. Interpretation of "Guidelines for the diagnosis and treatment of adult insomnia in China". *Chinese Journal of Contemporary Neurology and Neurosurgery*. 2013; 13(5): 363-367.

[9] Zhang Jingxing, Zhang Gongliang. The review of the sleep-wakefulness mechanism. *Chinese Journal of Contemporary Neurology and Neurosurgery*. 2006; 6(1): 11-16.

[10] Chen Yimin. (2016) Effects of right stellate ganglion block (SGB) on the sleep quality of healthy people. Fujian Medical University, Fuzhou.

[11] Liu Xianchen, Tang Maoqin, Hu Lei, et al. Reliability and validity of the Pittsburgh sleep quality index. *Chinese Journal of Psychiatry*. 1996; 29(2): 103-107.

[12] Nierenberg A, Adler L, Peselow E, et al. Trazodone for antidepressant-associated insomnia. *American Journal of Psychiatry*. 1994; 151(7): 1069-1072.

[13] Buysse D J, Iii C F R, Monk T H, et al. The Pittsburgh sleep quality index: A new instrument for psychiatric practice and research. *Psychiatry Research*. 1989; 28(2): 193-213.

[14] Su Shuijun, Yang Guan, Zhuang Weiyou, et al. Comparison of the effectiveness of health management by 5 smart sports bands. *Journal of Physical Education*. 2018; 25(3): 67-73.

Appendix

Basic datas of 30 cases

	gender	age	first visit	"disease course"	"[Pre] length of total sleep/h"	"[Post] length of total sleep/h"	"[augmenter(Δ)] length of total sleep/h"	"[Pre] length of deep sleep/min"	"[Post] length of deep sleep/min"	"[augmenter(Δ)] length of deep sleep/min"	[Pre] PSQI	[Post] PSQi	"PSQI Reductive Ratio"
1	female	49	2017.9.4	1 month	3.17	5.5	2.33	47.5	75.90	28.40	14	5	64.286%
2	male	40	2017.9.7	2 months	3.83	3.83	0.00	55	49.00	-6.00	15	14	6.667%
3	female	40	2017.9.11	2 years	3.67	4.5	0.83	39.6	56.70	17.10	17	7	58.824%
4	female	39	2017.9.17	1 month	2.17	4.33	2.16	19.5	54.60	35.10	15	7	53.333%
5	female	44	2017.9.22	5 years	2.33	3.83	1.50	35	46.00	11.00	13	8	38.462%
6	female	50	2017.10.2	3 months	1.5	6.67	5.17	20	108.00	88.00	14	4	71.429%
7	female	70	2017.10.6	3 months	3	2.83	-0.17	36	34.00	-2.00	16	15	6.250%
8	male	29	2017.10.10	6 months	4.67	6.5	1.83	70	93.60	23.60	14	5	64.286%
9	male	60	2017.10.11	20 years	2	5.67	3.67	22.8	78.20	55.40	16	5	68.750%
10	female	62	2017.10.17	5 years	3.83	6.67	2.84	57.5	96.00	38.50	16	6	62.500%
11	female	25	2017.10.29	2 months	4.83	7.17	2.34	69.6	111.80	42.20	14	5	64.286%
12	male	42	2017.10.30	3 years	4.5	6.67	2.17	54	92.00	38.00	13	6	53.846%
13	female	42	2017.11.3	1 month	5	7.33	2.33	74	101.20	27.20	14	5	64.286%
14	female	70	2017.11.8	10 years	4.83	6.5	1.67	68	93.60	25.60	14	6	57.143%
15	male	41	2017.11.17	5 years	5	7.67	2.67	75	114.00	39.00	15	7	53.333%
16	male	30	2017.11.21	2 months	3.83	7.67	3.84	52.9	115.00	62.10	15	7	53.333%
17	male	32	2017.12.5	6 years	4	6.67	2.67	57.6	92.00	34.40	15	7	53.333%
18	male	36	2017.12.20	1 year	3.83	7.17	3.34	52.9	103.20	50.30	13	4	69.231%
19	female	50	2018.1.5	1 month	3.33	5.83	2.50	50	84.00	34.00	13	6	53.846%
20	male	47	2018.1.27	2 years	2.83	5.5	2.67	25.5	76.80	51.30	16	3	81.250%
21	female	50	2018.2.14	3 years	2.33	6.5	4.17	35	97.50	62.50	15	6	60.000%
22	male	48	2018.3.4	10 years	4.17	6.33	2.16	62.5	87.40	24.90	15	6	60.000%
23	male	69	2018.4.6	10 years	2.5	7	4.50	37.5	109.20	71.70	16	4	75.000%
24	female	34	2018.5.19	10 years	4	5.67	1.67	60	71.40	11.40	15	6	60.000%
25	female	68	2018.5.19	1 year	3.83	6	2.17	39.1	86.40	47.30	14	5	64.286%
26	female	45	2018.6.9	1 month	4.33	6.83	2.50	36.4	102.50	66.10	15	7	53.333%
27	male	14	2018.7.4	2 months	3	6.83	3.83	41.4	106.60	65.20	14	6	57.143%
28	female	37	2018.5.2	2 years	4	6.67	2.67	57.6	96.00	38.40	13	5	61.538%
29	female	50	2018.8.14	6 months	2	5.5	3.50	30	82.50	52.50	13	3	76.923%
30	female	58	2018.9.18	12 years	2.83	5.67	2.84	42.5	88.40	45.90	13	6	53.846%