

Case Reports

Acupuncture for Restless Legs Syndrome: A Retrospective Case Series

Carlo Di Stanislao, MD,¹ Rosa Brotzu, MD,¹ Giovanna Franconi, MD²

ABSTRACT

Background: Restless Legs Syndrome (RLS) is a common clinical entity that can cause considerable discomfort and negatively affect quality of life. Traditional Chinese Medicine (TCM) does not recognize a specific pattern of this disease, but some reports have been published in which acupuncture has been shown to have a positive effect.

Objective: To evaluate the effect of acupuncture on patients with RLS.

Design, Setting, and Patients: A retrospective case series of 30 Italian adults (19 women and 11 men) aged 29-82 years, all with RLS. Patients were treated between December 1996 and December 2007. Patients were treated according to the following pattern: Yang Deficiency (ST 25 and ST 37), Qi Stagnation (LR 1 and GB 34), Yang Stagnation (GB 32 and TB 12), and Yin and Yang Stagnation (GB 32 and LR 6). A total of 12 sessions were performed twice a week for the first 2 months, then once a week for the third month.

Main Outcome Measures: Response to treatment was assessed by comparing the number of episodes of RLS per week, number of sleepless nights, and a visual analog scale (VAS) score for sleep quality before and after acupuncture. Global patient satisfaction with the treatment was assessed via a structured interview.

Results: Yin and Yang Stagnation was present in 13 patients (aged 29-47 years), and RLS improved or disappeared in 12 patients up to 6 months after acupuncture treatment. The other patterns were present in 17 patients (aged 76-82 years), and RLS improved or disappeared in 10 patients after acupuncture treatment. Sleepless nights decreased from a mean of 3.9/wk at baseline to 2/wk at the end of treatment, and to 1/wk at 6-month follow-up. Global patient satisfaction at the end of treatment was excellent in 24% of patients, good in 35% of patients, and unsatisfactory in 41% of patients.

Conclusions: Acupuncture may have a positive effect on RLS and the effect can be long-lasting. However, further research is necessary, especially given the mixed patient satisfaction in this study.

INTRODUCTION

RESTLESS LEGS SYNDROME (RLS) WAS first described by the Swedish neurologist Karl Axel Ekbom at the beginning of the 20th century. It is characterized by the uncontrollable urge to move the legs that occurs or worsens

with rest. Affecting an estimated 6% to 25% of the adult population, it is twice as prevalent in women and more common in the elderly, where it represents a significant cause of insomnia. RLS can be inherited, involving a defect in dopamine metabolism, or can be related to altered iron metabolism; thus, it may occur, for example, in pregnant

¹Internal Medicine Dept., S. Salvatore Hospital, L'Aquila, Italy.

²Internal Medicine Dept., Tor Vergata University, Roma, Italy.

women, patients with end-stage renal disease, and individuals with iron deficiency.¹

Traditional Chinese Medicine (TCM) does not recognize a specific pattern of this disease.² The only author who has described this syndrome from an energetic point of view is J.M. Kespì,^{3,4} who has made some significant observations. He differentiated RLS into Yang Deficiency in the lower extremities and Yang Stagnation. In the first pattern, there will be Fullness of Yang in the upper part of the body (typical symptoms will be headache, irritability, claustrophobia, etc) and Yang Deficiency in the lower extremities (typical symptoms will be cold feet and legs, easy fatigability, and symptoms related to Yang Ming disturbances such as heartburn, postprandial headache, and hyperacidity). This pattern is related to Yang Ming disturbances because one of the functions of Yang Ming is to lower Yang. The second pattern, Yang Stagnation, is not described in TCM but, according to Kespì and the French Acupuncture Association, is considered a disturbance of Shao Yang, which, according to the Classics (*Nei Jing and Nan Jing*) control the state of the muscles and their tension even if involuntary. In this pattern, the symptoms will improve with heat and worsen with cold, and are accompanied by typical Shao Yang symptoms (drifting aches, fever sensation, etc). Kespì stated that the Yang Deficiency in the lower extremities should be treated by needling ST 25 (Tianshu) and ST 37 (Juxu Shanglian), while Yang Stagnation should be treated by needling GB 32 (Zhongdu) and TB 12 (Xiaoluo).

In our experience, Qi Stagnation may also be responsible for RLS.⁵ Typical symptoms include pain in the hypochondria, intercostal pain, anxiety and depression, and mood swings. In the case of Qi Stagnation, the treatment is to needle LR 1 (Dadun) and GB 34 (Yanglingquan) (D. Konopacki, written personal communication, 2003).

Another cause of RLS is Yin and Yang Stagnation, characterized by cramps, cold feet, insomnia, urinary incontinence (Yin Stagnation in the lower part of the body), muscle tension, light anxiety, nervousness, and the need to be in motion (Yang Stagnation). This pattern is characterized by a sensation of cold legs and feet, relieved by movement and heat, and worsened by rest. In this pattern, some useful acupoints to activate Yin and Yang circulation in the lower extremities are GB 32 (Zhongdu), which is able to move Yang (Yang Shu), and LR 6 (Zhongdu), which is useful for the local stagnation of Yin (Yin Zhi).^{3,4}

METHODS

We examined the charts of patients treated for RLS at the Acupuncture Clinic of the S. Salvatore Hospital in L'Aquila, Italy, from December 1996 to December 2007. All patients signed an informed written consent form and were treated according to the principles of the Declaration of Helsinki.

In treating RLS, acupoints were selected according to pat-

tern discrimination. Each acupoint was needled using a sterile disposable needle with copper handle (Hua Tuo brand), 0.30 × 30 mm. The needles were inserted with a variable angle and depth according to the location; in some patterns, manipulated at the beginning of the session with rapid twisting movements until attainment of De Qi, then left in place for 30 minutes without further manipulation. A total of 12 sessions were performed: twice a week for the first 2 months, then once a week for the third month.

The treatment according to the pattern was as follows:

- Yang Deficiency in the Lower Extremities. ST 25 (Tianshu) and ST 37 (Juxu Shanglian) were needled, with the tip of the needle facing downward (caudally toward the feet).
- Yang Stagnation. GB 32 (Zhongdu) and TB 12 (Xiaoluo) were needled perpendicularly, and with a strong needle manipulation until attainment of De Qi.
- Qi Stagnation. LR 1 (Dadun) and GB 34 (Yanglingquan) were needled perpendicularly, without any manipulation.
- Yin and Yang Stagnation. GB 32 (Zhongdu) and LR 6 (Zhongdu) were needled perpendicularly with a depth of 1 cun; needles were not manipulated.

Patients were also instructed to perform a linear massage on themselves along the Channels involved (Zu Jue Yin for Qi Stagnation, Yang Ming for Yang Deficiency, and Shao Yang in the other patterns), every evening for 10 minutes before bedtime.⁶

Patients' response to treatment was assessed by comparing the number of episodes of RLS per week, the number of sleepless nights, and a visual analog scale (VAS) score for sleep quality before and after acupuncture treatment. Global patient satisfaction with the treatment was assessed via a structured interview by a physician not associated with acupuncture treatment.

RESULTS

From December 1996 to December 2007, we treated 30 adults (19 women and 11 men) aged 29-82 years, with RLS. The range of disease duration was 3 months to 3 years. Family history of RLS was present in 3 patients (age range, 29-32 years) and there were no comorbidities except for 2 patients who had rheumatoid arthritis. Physical examination findings were normal in all patients and particularly, no neurological signs were present. No electrolyte imbalances (serum potassium and magnesium) or abnormalities in serum iron, ferritin, and serum iron-binding capacity were present. All patients were already receiving treatment with tricyclic antidepressants, and 4 also with benzodiazepines. No patient had used alternative or complementary therapies before.

Yin and Yang Stagnation was present in 13 patients, 9 women and 4 men, aged 29-47 years. After 12 acupuncture

sessions in 5 cases, RLS disappeared and was not present at 6-month follow-up; in 3 cases, RLS disappeared but had re-occurred at 6-month follow-up; in 4 cases, RLS was attenuated but did not disappear; and in 1 case, there was no effect.

In another group of 17 patients, 10 women and 7 men, aged 76-82 years, Yang Deficiency in the lower extremities was present in 9 cases, Yang Stagnation was present in 3 cases (2 cases also with rheumatoid arthritis), and Qi Stagnation was present in 5 cases. After 12 acupuncture sessions, RLS improved or disappeared in 10 patients.

Sleepless nights decreased from a mean of 3.9/wk at baseline to 2/wk at the end of treatment, to 1/wk at 6-month follow-up. Global patient satisfaction at the end of treatment was excellent in 24% of patients, good in 35% of patients, and unsatisfactory in 41% of patients.

DISCUSSION

In our series, we observed that young patients with RLS tend to have Yin and Yang Stagnation, while older patients tend to have Yang Deficiency in the lower extremities. The 2 patients with RLS and rheumatoid arthritis had Yang Stagnation, which is associated with Shao Yang disturbances. The association between RLS and rheumatoid arthritis has already been described.⁷ RLS symptoms are more frequent in patients with rheumatoid arthritis than in controls with osteoarthritis or seronegative arthropathy, and may indicate a greater rheumatoid arthritis disease severity and activity. The 2 patients with RLS and rheumatoid arthritis in our series did not respond to the acupuncture treatment, suggesting the presence of an organic neurological disorder.

Two other reports from the literature have shown a positive effect of acupuncture on RLS. In 1 of them, Dai et al⁸ hypothesized that RLS in stroke patients depends on altered circulation of Qi and Blood resulting in malnourishment of tendons. They randomized 25 stroke patients to a treatment of ST 31 (Biguan) with needling and moxa, which can activate Qi and Blood circulation in the legs to remove any obstruction, possibly by dilating blood vessels and improving local blood circulation.

In one case report, Hu² described RLS as caused by Blood Deficiency and Blood Stasis, and pathogenic Cold Invasion. Treatment consisted in nourishing Blood, relaxing muscles and tendons to stimulate Blood circulation, and heating the Channels to eliminate pathogenic Cold. LI 4 (Hegu), GB 34 (Yanglingquan), and LR 3 (Taichong) were treated in dispersion, and SP 6 (Sanyinjiao), SP 9 (Yinlingquan), SP 10 (Xuehai), ST 36 (Zusanli), GB 31 (Fengshi), GB 39 (Xuanzhong), and GB 40 (QiuXu) were treated using the uni-

form method of tonification–dispersion. Craniopuncture was also used.

CONCLUSIONS

This case series supports the usefulness of interpretative models other than those related only to the Zang/Fu theory in TCM in terms of organization and selection of acupoints active for RLS. Randomized controlled trials are necessary to validate the efficacy of this approach. However, our results support the notion that acupuncture can provide a valid therapy for RLS not linked to detectable organic causes that are refractory to common drug therapies.

DISCLOSURE STATEMENT

No competing financial interest exists.

REFERENCES

1. Allena RP, Picchietti D, Hening WA, et al. Restless legs syndrome: diagnostic criteria, special considerations, and epidemiology. *Sleep Med.* 2003;4:101–119.
2. Hu J. Acupuncture treatment of restless leg syndrome. *J Tradit Chin Med.* 2001;21(4):312–316.
3. Kespì JM. *Cliniques.* Paris, France: Guy Tredaniel; 1982.
4. Kespì JM. *L'Acupuncture.* Moulin les-Metz, France: Maisson-neuve; 1982.
5. De Berardinis D, Di Stanislao C, Corradin M, Brotzu R. *Organi e Visceri in Medicina Cinese.* Rome, Italy: Sanli/Bimar; 1992.
6. Corradin M, Di Stanislao C, Parini M. *Medicina Cinese per lo Shiatsu ed il Tuina.* Milan, Italy: CEA; 2001.
7. Salih AM, Gray RE, Mills KR, Webley M. A clinical, serological and neurophysiological study of restless legs syndrome in rheumatoid arthritis. *Br J Rheumatol.* 1994;33(1):60–63.
8. Dai XY, Li Y, Song QZ, Han BJ. Clinical observation of warm acupuncture at Biguan (ST 31) in treating post-apoplectic restless legs syndrome. *J Acup Tuina Sci.* 2006;4(3):174–175.

Address correspondence to:

Carlo Di Stanislao, MD
Acupuncture Clinic, Internal Medicine Department
S. Salvatore Hospital
ASL 04, L'Aquila,
Italy

E-mail: c.distanislao@agopuntura.org

