Effects of acupuncture and massage on pain, quality of sleep and health related quality of life in patient with systemic lupus erythematosus

A. Mooventhan, L. Nivethitha[1]

Department of Naturopathy Clinical, Sri Dharmasthala Manjunatheshwara College of Naturopathy and Yogic Sciences, Ujire, Karnataka,
[1]Department of Acupuncture, Government Yoga and Naturopathy Medical College, Arumbakkam, Chennai, India

ABSTRACT

A 41-years-old woman diagnosed of Systemic Lupus Erythematosus (SLE) in 2006 came to our hospital - outpatient department with the complaint of severe pain and swelling over multiple joints associated with disturbed sleep/sleeplessness and poor quality of life since seven years. She received acupuncture (20 minutes) and massage (20 minutes) daily for the period of 30 days with 7 days of rest period in between after first 15 days. After intervention we observed reduction of pain in Visual Analog Scale score; improvement in day time sleepiness, and quality of sleep in Epworth Sleepiness Scale (ESS), and Pittsburgh Sleep Quality Index, respectively; improvement in health related quality of life in Short Form-36 version 2 (SF-36v2) Health Survey. These results showed that acupuncture and massage can be considered as an integrative approach for symptomatic management of SLE.

Key words: Acupuncture, massage, systemic lupus erythematosus

BACKGROUND

Systemic lupus erythematosus (SLE) is autoimmune in origin, and characterized by the presence of auto-antibodies directed against nuclear antigens. Prevalence is estimated to be about 1/1000 overall with a female to male ratio of 10:1.[1] To reduce pain and other symptoms,[2] SLE patients commonly use complementary and alternative medicine,[3] which includes acupuncture, massage, diet etc.[4] Acupuncture is safe and feasible for patients with SLE[2] and massage can help in the reduction of pain, swelling, stress and anxiety; promote muscle relaxation and mobility along with improvement in sleep quality.[5]

Address for correspondence:
Dr. A. Mooventhan, Department of Naturopathy Clinical, SDM College of Naturopathy and Yogic Sciences, Ujire, Karnataka, India.
E-mail: dr.mooventhan@gmail.com

Received: 15-Oct-2013
Revised: 22-Nov-2013
Accepted: 25-Nov-2013

Access this article online

Quick Response Code:

Website: www.jaim.in

DOI: 10.4103/0975-9476.140484

CASE PRESENTATION

Our patient was 41-years-married woman, diagnosed of SLE and underwent conventional treatment since 2006 in government hospital. Her symptoms, as described by her, began with pain associated with swelling, mild stiffness in multiple joints (toes, ankles, knees, wrists, elbows, and shoulders with symmetrical distribution) and lower back in 2006; initially she was put on diclofenac for few weeks by her physician and later discontinued on her own accord. In the same year, laboratory findings for anti-nuclear antibody (ANA) indicated sub-typing of ANA positive. Then she was put on steroids for further management.

She visited our Outpatient Department (OPD) in February 2013 with the complaint of severe pain and swelling over bilateral toes, ankle joints, knee joints, fingers, wrist joints, elbow joints, and shoulder joints along with lower backache on and off since seven years which were associated with disturbed sleep/sleeplessness and poor quality of life. She was known case of hypertension, nephritic syndrome, and taking conventional medications (frusemide, enalapril, calcium lactate, and ranitidine) and underwent

cholecystectomy in 1999; hysterectomy and appendectomy in 2001 in a private hospital. As she was worried about taking many medicines, she stopped taking except for frusemide and ranitidine which has been taken irregularly for the past 15 months. The study protocol was approved by Govt. Yoga and Naturopathy Medical College, Chennai and the written consent has been obtained from the subject.

TREATMENT

In our OPD, she received Traditional Chinese Medicine (TCM) style of acupuncture for symptomatic relief of SLE. We used totally 10 needles for each session and the points used for the study were GV-20, GV-6, LI-11, HT-7, GB-34, and KI-3 as described in Table 1.[6,7] All points were pricked bilaterally except GV points. Our patient was informed about the procedure, sensations of needle insertion and response sought. All needles left out for the duration of 20 min without any stimulation for each session. We used 1 *cun* filiform, a locally manufactured stainless steel needles with 0.38 mm diameter and 25 mm length. Our patient was advised to come to our OPD daily for 30 days to complete 30 sessions of intervention with 7 days rest period after first 15 sessions. This rest for a week is traditionally indicated for improvement and Adaptation.[6,7] Along with acupuncture our patient received Swedish massage which included touch, stroking, friction, kneading and joint movements to bilateral foot with ankle joints; knee joints; hands with wrist joints; elbow joints; shoulder joints and lower back for a duration of 20 min for each session daily and advised to take more fruits and vegetables; to avoid non-vegetarian and deep fried foods. Acupuncture and massage were given by one of the author who is institutionally qualified with two years experience in clinical massage and acupuncture. Data assessments were done before and after the intervention [Table 2].

OUTCOMES AND FOLLOW-UP

Visual analog scale for pain

Visual Analogue Scale (VAS) was used to evaluate subject's intensity of pain in a scale of 0 to 10, where 0 indicates no pain and 10 indicates worst pain. The subject was advised to mark in the scale to indicate her pain intensity before and after the intervention.[5]

Epworth sleepiness scale

Epworth Sleepiness Scale (ESS) was used to measure daytime sleepiness of our patient, in which she was asked to rate the chance of dozes off or fall asleep during daytime in eight different situations with each rated from 0 to 3, where 0 indicates would never doze, 1 indicates slight chance of dozing, 2 indicates moderate chance of dozing and 3 indicates high chance of dozing. Total score >10 indicate excessive daytime sleepiness.[5]

The pittsburgh sleep quality index

Pittsburgh Sleep Quality Index (PSQI) consists of seven components in a 9-item sleep questionnaire, which was used to evaluate subject's quality of sleep over the preceding month. The total score 0-4 indicates good sleep quality, 5-10 indicate poor sleep quality, and >10 indicates sleep disorder.[5]

Short form-36 version 2 (SF-36 v2) health survey

It consists of a 36-item questionnaire, which measures the health in eight dimensions. For each dimension, item scores were noted, averaged, and transformed into a scale of 0-100 where 0 indicates worst possible health and 100 indicates best possible health. The reliability of its domains was shown to have improvement over the previous version of SF-36.[8]

FOLLOW-UP

Because of the short study duration, our subject was not followed up to see whether or not these effects were sustained, thereby limiting the scope of our study.

DISCUSSION

Thirty sessions of acupuncture and massage to the patient with SLE was useful in reducing disease impact by reducing pain, improving quality of sleep along with improvement in health related quality of life. After completion of 30 sessions of treatment, VAS

Table 1: Description of acupuncture points

Needling point	Location	Depth of needling; method
GV20 (*Baihui*)	On the vertex of the skull, 5 *cun* behind the anterior hairline and 7 *cun* above the posterior hairline in the middle	0.5 *cun*; oblique needling
GV6 (*Jizhong*)	On the back in the midline between the dorsal spine of T11-T12	0.5 *cun*; obliquely (upwards) needling
LI11 (*Quchi*)*	Lateral end of the elbow crease (when elbow is semi-flexed)	1 *cun*; perpendicular needling
HT7 (*Shenmen*)*	Radial border of tendon of flexor carpi ulnaris	0.5 *cun*; perpendicular needling
GB34 (*Yanglingquan*)*	In the depression anterior and inferior to the head of fibula	1 *cun*; perpendicular needling
KI3 (*Taixi*)*	Mid way between the tip of the medial maleolus and medial border of tendoachilles	1 *cun*; perpendicular needling

* indicate bilateral needle insertion. GV=Governing vessel, LI=Large intestine, HT=Heart, GB=Gall bladder, KI=Kidney, T=Thoracic vertebrae

Table 2: Pre and post-intervention assessment

Parameter	Pre-assessment	Post-assessment
Pain (VAS) score	8.2	3.4
ESS	13	5
PSQI	12	4
SF-36 v2 health survey		
Physical functioning	35	75
Role limitations due to physical problems	25	68.75
Role limitations due to emotional problems	33.33	91.66
Energy/fatigue	18.75	68.75
Emotional well-being	10	70
Social functioning	50	87.50
Pain	12.5	57.50
General health	25	60

VAS=Visual analogue scale, ESS=Epworth sleepiness scale, PSQI=Pittsburgh sleep quality index, CAT=Category, +ve=Positive response, –ve=Negative response, SF-36v2=Short form-36 version 2

score for pain showed marked reduction in pain, which indicates acupuncture and massage may be helpful for pain management in patients with SLE [Table 2]. The physiological basis of analgesic action of acupuncture has been attributed to release of endogenous opioid; modulation of adrenergic system; 5-hydroxytryptamine signaling system; *N*-methyl-D-aspartic acid/α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA)/kainite-signaling system; other neurotransmitter systems including somatostatin, glial-derived neurotrophic factor, and cannabinoids, anti-inflammatory theory, modulation of long-term depression and long-term potentiation neural plasticity and activation of diffuse noxious inhibitory control system.[9] In a previous study on SLE a 45-year-old woman having multiple arthralgia, coldness in fingers and toes, and Raynaud's phenomenon received electroacupuncture and found reduction in pain VAS score compared to earlier score.[10]

ESS and PSQI questionnaire score showed marked reduction in daytime sleepiness and sleep disorder respectively compared with before intervention. These results indicate the effectiveness of acupuncture and massage on quality of sleep in patient with SLE. This might be due to acupuncture that can increase the content of γ-amino butyric acid, and then enhance sleep quality; and in improving duration of sleep no difference were observed between acupuncture and drugs.[11] In a previous study, the use of acupressure over HT 7 (*Shenmen*) improved the quality of sleep in patients with cancer[12]. Massage therapy may promote parasympathetic activation, which causes reductions in heart rate, blood pressure, stress, decrease cortisol and increase serotonin, dopamine and endorphins which are useful for pain reduction as well as for the improvement of sleep quality.[5]

SF-36 showed health related quality of life of our patient was poor before intervention but after intervention better improvements were observed in all the eight dimensions. It suggests that combination of acupuncture and massage may play important role in improving health related quality of life in patients with SLE. According to previous study, in improving self rating depression scale scores no difference were observed between acupuncture and trazodone; moreover, acupuncture was safer than trazodone.[12]

No adverse events were found in our study except brief needling pain which is supported by a previous pilot study on acupuncture for SLE.[2]

CONCLUSION

These results showed acupuncture and massage have the effect on reducing pain; improving quality of sleep and health related quality of life in patient with SLE. Though the results are encouraging, further studies are required with larger sample size for validation.

ACKNOWLEDGMENT

We would like to acknowledge Dr. Dhananjay Vijay Arankalle, Consultant, National Institute of Naturopathy, Pune, for his help in preparing manuscript.

REFERENCES

1. Manson JJ, Rahman A. Systemic lupus erythematosus. Orphanet J Rare Dis 2006;1:6.
2. Greco CM, Kao AH, Maksimowicz-McKinnon K, Glick RM, Houze M, Sereika SM, *et al.* Acupuncture for systemic lupus erythematosus: A pilot RCT feasibility and safety study. Lupus 2008;17:1108-16.
3. Haija AJ, Schulz SW. The role and effect of complementary and alternative medicine in systemic lupus erythematosus. Rheum Dis Clin North Am 2011;37:47-62.
4. Chou CT. Alternative therapies: What role do they have in the management of lupus?. Lupus 2010;19:1425-9.
5. Nerbass FB, Feltrim MI, Souza AS, Ykeda DS, Lorenzi-Filho G. Effects of massage therapy on sleep quality after coronary artery bypass graft surgery. Clinics (Sao Paulo) 2010;65:1105-10.
6. Arankalle DV, Nair PM. Effect of electroacupuncture on function and quality of life in Parkinson's disease: A case report. Acupunct Med 2013;0:1-4.
7. Jayasuriya A. Clinical Acupuncture. 7th revised ed. New Delhi: B Jain Publishers (P) Ltd; 1998.
8. Jenkinson C, Stewart-Brown S, Petersen S, Paice C. Assessment of the SF-36 version 2 in the United Kingdom. J Epidemiol Community Health 1999;53:46-50.
9. Leung L. Neurophysiological basis of acupuncture-induced analgesia-an updated review. J Acupunct Meridian Stud 2012;5:261-70.
10. Donoyama N, Ohkoshi N. Case report: Electroacupuncture therapy for arthralgia and Raynaud's phenomenon in a patient with systemic lupus erythematosus. Acupunct Med 2010;28:49-51.
11. Cao H, Pan X, Li H, Liu J. Acupuncture for treatment of insomnia: A systematic review of randomized controlled

trials. J Altern Complement Med 2009;15:1171-86.
12. Cerrone R, Giani L, Galbiati B, Messina G, Casiraghi M, Proserpio E, *et al*. Efficacy of HT 7 point acupressure stimulation in the treatment of insomnia in cancer patients and in patients suffering from disorders other than cancer. Minerva Med 2008;99:535-7.

How to cite this article: Mooventhan A, Nivethitha L. Effects of acupuncture and massage on pain, quality of sleep and health related quality of life in patient with systemic lupus erythematosus. J Ayurveda Integr Med 2014;5:186-9.

Source of Support: Nil, **Conflict of Interest:** None declared.