

# Multiple sclerosis in an acupuncture practice

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## Abstract

Multiple sclerosis (MS) is a severe autoimmune demyelinating disease that affects nervous system, has high morbidity and mortality and no effective targeted therapies are available.

We present a case of 66-year-old female patient who has been treated by both conventional and Chinese traditional medicine after diagnosis was confirmed in 2008 as MS and antiphospholipid syndrome associated with CNS vasculitis. After diagnosis with clinical image confirmed with CT and MRI scan, where demyelinating zones were present, she started pharmacological therapy without major improvement. Patient suffered with fatigue, walking difficulties, weakness, was unable to articulate due to vocal cords spasms. We started acupuncture treatment in 2010 with herbal supplement therapy as well and patient had in total of 197 sessions with 10 sessions cycle and 2-3 months pause. Patient's mobility was significantly improved after therapy, as well as vocal cord spasms and she gained back her articulation. Subjectively, patient also reported pain relief, mobility and fatigue improvement.

Traditional Chinese medicine showed to be effective tool for pain and spasm relieving and can be powerful complementary tool in patients with chronic diseases, such as MS.

## INTRODUCTION

Multiple sclerosis is a chronic autoimmune disease characterized by inflammation, demyelination, axonal/neuronal damage, oligodendrocyte loss, and oxidative stress with myelin destruction in the spinal cord, brain and optical nerve, although severity of the disease and clinical course may vary (Bartova *et al.* 2016). Pathophysiological findings suggest that disease is associated with the mitochondrial DNA damage (Gvozdjakova *et al.* 2017) and has some epidemiological and pathological signs of infection.

Spasticity accompanying MS is consequently a result of corticospinal motor neuron damage and

affects approximately 34 % of people with diagnosis. It often occurs with fatigue and pain and leads to contractures. The most frequently used Ashworth scale evaluates the resistance to passive movement (measured values are 0-5) (Rizzo *et al.* 2004; Cibulcik 2015). Visual Analogue Scale (VAS) or more complex Multiple Sclerosis Functional Composite (MSFC) are also used (Kantorova *et al.* 2012).

Multiple Sclerosis mostly affects the Western and Northern hemisphere population and the disease has a predilection for white races and for women. According to the epidemiological data,

prevalence is as high as >100/100,000 inhabitants in Europe and America, whereas in African countries is usually lower than 2/100,000 and in China less than 1/100,000 (Otero-Romero *et al.* 2016).

Etiology of the myelin loss remains unknown. The first symptom in young people is retrobulbar neuritis usually manifested as a blurred or distorted vision. In older patients, MS is manifested as the weakness in limbs, pain, prolonged fatigue and depression (Mohr *et al.* 2006; Raisi *et al.* 2015). Paresthesia in fingers, dizziness, vomiting or nausea, speech difficulties, memory and concentration problems, pain and convulsions in legs, incoordination, nystagmus, electric-shock sensation along the spine or in limbs, numbness in limbs, urinary urgency, impotence, incontinence low vitamin D blood levels (Jahromi *et al.* 2016) and other symptoms may be present in patients.

Diagnosis is usually made after white matter lesion findings on MRI (Wu *et al.* 2002; Haiderr *et al.* 2016), or typical cerebrospinal fluid findings of lumbar puncture are found (Freedman *et al.* 2005; Kottil 2009; Sosvorova *et al.* 2015) with clinical correlation of above-mentioned symptoms. According to traditional Chinese medicine, in patients with MS Blood is infected by latent heat (Sun 1997; Xia *et al.* 2010).

Therapy for MS include immunosuppressive drugs such as azathioprine, cyclophosphamide and cyclosporine, which might have potential to slow down progression of the disease, however all of them have potentially serious adverse effects. Recently, it was shown that interferon- $\beta$ -1b can be useful by diminishing the exacerbation rate in MS without leading to unacceptable adverse effects. However, symptomatic treatment still remains of crucial importance in the management of MS patients. Usually symptoms can be alleviated to some extent with pharmacological interventions, rehabilitation procedures and psychosocial consultations. Acupuncture, herbs and other non-conventional methods are less frequent (van Oosten *et al.* 1995; Maciocia 2007).

The prognosis depends on the type of MS, sex, age and race, accessory symptoms, mental condition and the degree of disability. The course of disease is usually easier in women and those who were diagnosed at younger age (Dolejšová 2016).

## CASE

Female patient born in December 1950, treated for MS since 2008 when the diagnosis was confirmed as EDSS (Expanded Disability Status Scale) 5.5 type, antiphospholipid syndrome associated with CNS vasculitis.

According to the patient's records, she had repeated sinus infection treated with antibiotics and several lower respiratory tract infections, including pneumonia and tuberculosis treated in sanatorium. The patient also underwent surgical procedures for spasmodic dysphonia and stridor in 1997 and 2000, but despite of symp-

toms, brain MRI at 48 years of age (1998) was negative. Since 2005, the spasm of vocal cords has been accompanied by aphonia and treatment by botulotoxine injections to vocal cords was terminated due to no effect.

In 2008, CT and MRI of cervical spine and brain were performed. Brain MRI found juxtacortical demyelinated lesions 8x5mm, bilateral frontoparietal (FTP), juxtacortical and paraventricular small demyelinated lesions in the white matter. The patient was diagnosed with multiple sclerosis based on gait difficulty, weakness, insomnia, inarticulation and MRI findings. Pharmacological treatment with Synacthen (cosyntropin), Diprophos (betametason), Solumedrol (methylprednisolon), Prednison (prednisolon), Baclofen (baclofen), Pyrabene (piracetam), Cavinton (vinpocetine), was administered without positive effect. Other diagnoses found in records were: pancreatopathy, chronic peptic ulcer and Hashimoto's Struma. Follow-up brain MRI in 2013 confirmed diagnosis, but didn't show any new lesions.

Patient came to our practice for the first time in December 2010. Communication was performed in writing due to aphonia. Her major complains were severe pain, numbness insomnia, weakness and loss of voice.

After the primary examination, which showed significant Qi deficiency and consequently empty Heat, Dampness and Blood stagnation, we have started an acupuncture treatment. Acupuncture sessions took place once a week for the period of 10 weeks. In the first stage we used mainly Hua-tuo-jiayi points from C5 to S2 vertebrae. 5-7 cm long needles were applied to every other vertebra. The treatment was supplemented by Chinese herbs, Ba Zhen Wan formula and later by combination of Bu Zhong Yi Qi Wan and Gui Pi Wan formula. After 10 acupuncture sessions and herbal therapy her walking difficulties and tingling in fingers improved significantly and she was able to walk with better stability.

We applied also other points combinations in particular stages of treatment to balance Yin and Yang, replenish Qi and alleviate empty Fire by strengthening Yi: Sanyinjiao (Sp6), Taixi (K3), Zhaobai (K6), Zusanli (St36), Fenglong (St40) points etc. We have often used the points on the Chong Mai extraordinary channel, Gongsun (Sp4) in combination with Neiquan (CS6) to replenish Yuan Qi and improve the overall internal organ microcirculation.

The patient subjectively indicated improvement in pain relief, mobility and weakness improvement.

However, severe vocal cords spasms persisted at any attempts to speak, so we were dealing with the vocal cords disorder as well. The following recommended acupoints were used for the vocal cords treatment: Lianquan (CV 23), Huagai (CV20), Tongli (H5), Zhaobai (K6), Lidui (St45), Neiting (St44), Renying (St9), Hegu (LI4), Taichong (Liv3). Acupuncture was supplemented with minimum doses of the Tian Ma Gou Teng Wan

formula which relieves the spasms and improves the blood circulation in the brain. After two year therapy, patient was first time able to speak about her problems with mild pain in vocal cords. Unfortunately, relapse of the vocal cords spasm occurred after 3 months and she has lost her voice again. The treatment by acupuncture continued, the patient regained her voice in February 2014 and she has been able to communicate since then with minor occasional impairment but without the loss of articulation.

In total she has attended 197 acupuncture sessions in cycles of 10 sessions followed by 2–3 months pause. Besides the mobility improvement and pain relief, the renewed ability to speak was the most significant outcome of the treatment from the subjective point of view.

## DISCUSSION

Approximately 85% of patients with multiple sclerosis indicate impaired mobility as one of the major limitations in their daily life. Acupuncture studies found a reduction of spasticity and improvement of fatigue and imbalance in patients with multiple sclerosis (Hopwood & Donnellan 2010). Recent Portugal study also shows significant effect of acupuncture on gait in patients with MS (Criado *et al.* 2017).

Acupuncture had significant effect in treating chronic fatigue (Krupp 2012; Foroughipour *et al.* 2013), dizziness and incoordination, spasticity (Rizzo *et al.* 2004), pain (Martuliak 2014; Kopsky & Hessellink 2012; Tajik *et al.* 2012), urinary dysfunction (Hao *et al.* 2013).

However, the majority of the studies in this area are poorly designed, often without control, randomization, or blinding. Although many of the studies suggest that acupuncture is successful in improving MS related symptoms, lack of statistical rigor and poor study design make it difficult to draw any conclusions about the true effectiveness of this intervention in the MS population (Karpatkin *et al.* 2014). More well designed studies are therefore needed on bigger cohorts, for confirming these hypotheses.

Low prevalence of MS in Asia generally and China in particular (around 0.8/100,000) caused lack of data from traditional sources. In Chinese medicine, MS has been described as a „modern disease“, in 1974. Also the definition and pathology of MS is formulated in different terms and based on different concepts than worldwide, which is partly the reason why the concept of the TCM treatment and its classification in databases of large clinical trials are of little use.

## CONCLUSION

The absolute number of individuals with MS is increasing in the western countries and represents a substantial challenge to treatment, prevention, health promotion, and rehabilitation. Patients with MS face many chal-

lenges in their everyday life and their quality of life is often deteriorated. Since there is no curative treatment for MS, more studies for alternative treatment including TCM are needed. (Zeng *et al.* 2013) There is a lack of significant data in this area and more studies for alternative treatment with good design would be beneficial for patients and their quality of life. We believe, that example of our case showed, that acupuncture with supplementary therapy with traditional Chinese medicine can be effective treatment of some symptoms accompanying patients with MS.

## REFERENCES

- Bartova R, Petrelenicova D, Oresanska K, Prochazkova L, Liska B, Turecky L, Durfinova M (2016). Changes in levels of oxidative stress markers and some neuronal enzyme activities in cerebrospinal fluid of multiple sclerosis patients. *Neuroendocrinol Lett* **37**(2): 102–106. PubMed ID:27161425
- Cibulčík F (2015). Treatment of spasticity. *Neurologia pre prax. (Neurology in practice)* **16**: 23–28
- Criado MB, Santos MJ, Machado J, Gonçalves AM, Greten HJ. (2017) Effects of Acupuncture on Gait of Patients with Multiple Sclerosis. *J Altern Complement Med.* 2017 Apr 14. doi: 10.1089/acm.2016.0355
- Dolejšová V. (2016) Roztroušená skleróza-možnosti nekonvenční medicíny. (Multiple sclerosis – Non-conventional medicine treatment options) *Acupunctura BohemoSlovaca.* **26** (1) :21–24
- Foroughipour M, Taghanaki HR, Saedi M, Khazaei M, Sasan-zhad P, Shoeibi A (2013). Amantadine and the place of acupuncture in the treatment of fatigue in patients with multiple sclerosis: an observational study. *Acupuncture in Medicine.* **31**: 27–30
- Freedman MS, Thompson EJ, Deisenhammer F, Gavin G, Grimsley G, Keir G, Öhman S, Wallace W, Tourtellotte W, Racke MK, Shalief M, Sindic CHJM, Sellebjerg F (2005). Recommended Standard of Cerebrospinal Fluid Analysis in the Diagnosis of Multiple Sclerosis A Consensus Statement. *Arch Neurol.* **62**: 865–870. doi:10.1001/archneur.62.6.865
- Gvozdjáková A, Germaine C, Singh RB, Dúbravický J, Gazdíková K, Hlavatá A, Mravec B, Pella D, Mojto V, Šimko F, Palacka P, Ďuračková Z, Kucharská J, Vančová O. (2017) *Mitochondrial Medicine and Coenzyme Q10.* Herba: Bratislava. ISBN 978-80-89631-60-5.
- Haider L, Zrzavy T, Hametner S, Hoftberger R, Bagnato F, Grabner G, Trattnig S, Pfeifenbring S, et al. (2016) .The topography of demyelination and neurodegeneration in the multiple sclerosis brain. *Brain* **139**: 807–815; doi: 10.1093/brain/awv398. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4766379>
- Hao JJ, Cheng W, Liu M, Li X, Sun Z (2013). Treatment of multiple sclerosis with chinese scalp acupuncture. *Global Advances in Health and Medicine.* **2**: 8–13.
- Hopwood V, Donnellan C (2010). *Acupuncture in neurological conditions.* Churchill Livingstone Elsevier.
- Jahromi SR, Sahraian MA, Togha M, Sedighi B, Shayegannejad V, Nickseresht A, Nafissi S, Mohebbi N, Majdinasab N, Foroughipour M, Etemadifar M, Moghadam NB, Ayramlou H, Ashtari F, Alaie S (2016). Iranian consensus on use of vitamin D in patients with multiple sclerosis. *BMC Neurol.* **16**: 76. doi: 10.1186/s12883-016-0586-3.
- Kantorová E, Kurča E, Michalík J (2012). *Neurologia pre prax. (Practical neurology)* **13**: 213–216.
- Karpatkin HI, Napolione D, Siminovich-Blok B (2014). *Acupuncture and Multiple Sclerosis: A Review of the Evidence Evidence-based Complementary and Alternative Medicine.* 2014: 972935. doi: 10.1155/2014/972935. Epub 2014 Jun 18
- Kottl W (2009). Rammohan Cerebrospinal fluid in multiple sclerosis. *Ann Indian Acad Neurol.* **12**: 246–253. doi: 10.4103/0972-2327.58282. PMID: PMC2824952.

- 15 Kopsky DJ, Hesselink JM (2012). Multimodal stepped care approach with acupuncture and PPAR- $\alpha$  agonist palmitoylethanolamide in the treatment of a patient with multiple sclerosis and central neuropathic pain. *Acupunct Med.* **30**(1): 53–5. doi:10.1136/acupmed-2011-010119.
- 16 Krupp L (2012). Fatigue in intrinsic to multiple sclerosis (MS) and is the most commonly reported symptom of the disease. *Mult Scler* **12**: 204–208.
- 17 Mohr DC, Hart SL, Fonareva I, Tasch ES (2006). Treatment of depression for patients with multiple sclerosis in neurology clinics. *Mult Scler* **12**: 204–208.
- 18 Martuliak I (2014). *Patológia bolesti pre klinickú prax.* (Pain pathology in clinical practice.) Dali BB: Banská Bystrica, 310 1<sup>st</sup> ed. ISBN 978-80-971753-0-6
- 19 Maciocia G (2007). *The practice of Chinese Medicine: The Treatment of Diseases with Acupuncture and Chinese Herbs*, chapter 45, Churchill Livingstone, 2<sup>nd</sup> Edition, 2007.
- 20 van Oosten BW, Truyen L, Barkhof F, *et al.* (1995). Multiple sclerosis therapy: a practical guide. *Drugs* 1995; **49**: 200–12.
- 21 Otero-Romero S, Sastre-Garriga J, Comi G. (2016) Pharmacological management of spasticity in multiple sclerosis: systematic review and consensus paper. *Mult Scler.* **22**:1386–1396.
- 22 Raissi A, Bulloch AG, Fiest KM (2015). Exploration of undertreatment and patterns of treatment of depression in multiple sclerosis. *Int J MS Care.* **17**: 292–300; doi: 10.7224/1537-2073.2014-084.
- 23 Rizzo MA, Hadjimichael OC, Preiningerova J, Vollmer TL. (2004) Prevalence and treatment of spasticity reported by multiple sclerosis patients. *Multiple sclerosis* **10**: 589–595.
- 24 Sosvorova L, Kanceva R, Vcelak J, Kancheva L, Mohapl M, Starka L, Havrdova E (2015). The comparison of selected cerebrospinal fluid and serum cytokine levels in patients with multiple sclerosis and normal pressure hydrocephalus. *Neuroendocrinol Lett* **36** (6): 564–571
- 25 Sun Y (1997). [Prevention and treatment of multiple sclerosis with traditional Chinese medicine]. *Zhongguo Zhong Xi Yi Jie He Za Zhi.* 1997 Feb; **17**(2):113–4. Chinese. PubMed PMID: 9812668.
- 26 Xia Y, Cao X, Wu G, Cheng J (2010) *Acupuncture Therapy for Neurological Diseases: A neurobiological View.* Tsinghua University Press, Beijing and Springer Verlag Berlin Heidelberg.
- 27 Wu MT, Sheen JM, Chuang KH, Yang P, Chin SL, Tsai CY (2002). Neuronal specificity of acupuncture response: A fMRI study with electroacupuncture. *NeuroImage.* **16**: 1028–1937.
- 28 Zeng BY, Zhao K, Liang FR (2013). *Neurobiology of Acupuncture.* Int Rev Neurobiol.111. Elsevier. ISSN 0074-7742.