

Amyotrophic Lateral Sclerosis: An Acupuncture Approach

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ABSTRACT

Background: Amyotrophic lateral sclerosis (ALS) is an adult onset neurodegenerative disorder that has no curative treatment and is usually fatal. Modern medicine treatment is mostly supportive. Acupuncture has much more to offer by way of symptomatic relief and improving quality of life (QoL). Useful points for the treatment of bulbar paralysis, paralysis of upper and lower extremities, and correction of underlying Disharmony Patterns are discussed and an illustrative case is presented to demonstrate the acupuncture approach for treating ALS.

Case: A 55-year-old woman had weakness in her right arm and both legs for 4 months. She also had muscle cramps and clumsiness in the affected limbs, which rapidly progressed in the 4 months prior to presentation. She was diagnosed with ALS, given 50 mg of oral riluzole per day, and told that the condition was fatal. She sought acupuncture and was treated for two courses of 8 weeks each.

Results: After acupuncture, this patient's symptomatic relief was near perfect in that she became free from disabling symptoms and is now leading a normal life.

Conclusions: Acupuncture can be an effective modality of treatment for ALS, producing symptomatic relief and improving QoL.

Keywords: amyotrophic lateral sclerosis, paralysis, muscular weakness, motor neuron disease, acupuncture, muscle atrophy

INTRODUCTION

AMYOTROPHIC LATERAL SCLEROSIS (ALS) is the most common motor neuron disease (MND), which is an adult-onset neurodegenerative disorder characterized by progressive degeneration of cells of the lower cranial motor nuclei, anterior-horn cells of the spinal cord, and neurons of the motor cortex extending to the pyramidal tracts.¹

Although described by Charles Bell, KH, FRS, FRSE, FRCSE, MWS, in 1824, the connection between the symptoms and the underlying neurologic problems were first described by Jean Martin Charcot, MD, who used the term *amyotrophic lateral sclerosis* in 1874.²

It became well-known in the United States when the baseball player Lou Gehrig was affected by the disease in

1939; then it became known as Lou Gehrig's disease.* He died at the age of 37 of the disease. It became well-known worldwide when the famous physicist, Stephen William Hawking, CH, CBE, FRS, FRSA, was diagnosed with ALS in 1963 at the age of 21.† He has a slowly progressive form of ALS and is still alive.

MND usually manifests between ages 50 and 70 and is more common in men than in women in a ratio of 1.5:1. The prevalence in the United States is 4.3 cases per 100,000 per

*For Lou Gehrig—baseball player, visit: <https://www.biography.com/people/lou-gehrig> for more information

†For 7 Fascinating Facts about Stephen Hawking—Biography.com, visit: www.biography.com/news/stephen-hawking-biography-facts

year in the general population.³ In different populations, the reported incidence rates vary between 0.6 and 2.4 per 100,000 per year.⁴ In the United Kingdom, the age-standardized incidences of MND are 2.6 per 100,000 for women and 3.9 in men.⁵ Ninety percent to ninety-five percent of MND cases occur sporadically. The rest are inherited.⁵ Most familial MND cases are autosomal-dominant, with 20% of cases having mutations in the *SOD1* [antioxidant enzyme copper zinc super oxide dismutase] gene.⁶ Mutations in *TARD/BP* [transactive response DNA-binding protein] account for 5%–10% of familial ALS, mutations in *FUS* [fused in sarcoma] account for 5%, and mutations in *ANG* [angiogenin] account for 1%.⁶

The term *ALS* is more widely used in the United States; *MND* is more widely used in Europe. The presentations are:

- *ALS* (most common) with the loss of upper motor neurons (UMN) and lower motor neurons (LMN), producing a mixed picture in the limbs; *ALS* can also present with a *bulbar onset*, manifesting with speech and swallowing difficulties, and with limb manifestations later
- *Progressive muscular atrophy (PMA)*, predominantly with LMN lesions
- *Primary lateral sclerosis (PLS)*, predominantly with UMN lesions; this is rare.

MND may be associated with extra motor features, such as frontotemporal dementia in *ALS*. Fasciculations in the limb muscles is the hallmark of this disease. Upper-limb lesions are usually of the UMN type. Marked wasting is associated with exaggerated reflexes. The bladder is spared. Pseudobulbar palsy is often associated with emotional lability.

Diagnostic Criteria

The diagnostic criteria for *ALS* include:

- Clinical evidence of UMN degeneration
- Clinical, neuropathologic, and electrophysiologic evidence of LMN degeneration
- Absence of clinical and electrophysiologic evidence of other diseases, such as paraneoplastic syndromes; thyrotoxicosis; inclusion-body myositis; multiple-level, spinal-cord nerve-root compression; spinal muscular atrophy; porphyria; Kennedy's disease; lead poisoning; multifocal neuropathies producing a *PMA*-like picture; hereditary spastic paraplegia; multiple sclerosis; and spinal-cord compression producing a *PLS*-like syndrome.

Investigations

Investigations useful for diagnosing *ALS* include:

- Needle electromyography (EMG), the most useful test, showing fibrillations, fasciculation, positive waves, and giant motor units.

- Brain and cervical spine magnetic resonance imaging to exclude structural lesions.
- Laboratory tests performed to exclude treatable conditions; these tests include thyroid function, complete blood count, urea and electrolytes, creatine kinase, and serum and urine protein electrophoresis with immunofixation checks for a paraprotein that is rarely associated with *MND*, occurring as a paraneoplastic syndrome
- Lumbar puncture needed if white blood cells and protein levels in the urine are elevated, and an alternate diagnosis is likely
- Venereal disease research laboratory test, rheumatoid factor, antinuclear antibodies, and human immunodeficiency virus antibodies tests, performed only if suggested by associated symptoms.

Patients exposed to heavy metals should have their urine tested for their presence. Genetic testing, however, is not indicated as there is no specific treatment.

Conventional Treatment

Treatment is supportive, involving a neurologist, nurse specialist, dietitian, physiotherapist, speech therapist, psychologist, and a gastroenterology-and-respiratory team for feeding and respiratory support. Riluzole, which reduces presynaptic glutamate release, has been shown to extend the lifespan in *ALS* by ~2–3 months.⁷ This is more useful for bulbar *ALS*. Use of stem cells and cannabis are emerging treatments that need scientific validation.

Prognosis

The average survival from onset to death is 2–4 years.⁸ About 10% of patients with *ALS* survive for more than 10 years.⁶

Muscular Atrophy in Chinese Medicine

The following facts are significant⁹:

- Spleen controls the muscles and limbs.
- Spleen Deficiency is often associated with Stomach Deficiency.
- Liver controls the tendons.
- Kidney controls the nerve tissue in general.

In disorders associated with muscle wasting (known as Atrophy Syndrome in Chinese Medicine) there are usually Deficiencies of these functions. These are the Deficiency Patterns. Many times, retention of Dampness and Stasis of Blood can cause paralysis; these are Excess Patterns.

The cause of contraction of muscles is usually Liver Deficiency.

Twitching of muscles is due to Spleen and Kidney deficiency (usually Yang deficiency), leading to deficiency of Qi and Blood in the channels.

CHINESE MEDICINE TREATMENT

Commonly Used Points

Commonly used points to address ALS include¹⁰:

- *For the upper extremity*—LI 15, LI 14, LI 11, LI 10, TE 5, LI 4, and SI 3, are used according to the areas involved.
- *For the lower extremity*—GB 30, GB 31, ST 31, ST 32, ST 36, ST 41, GB 41, and GB 40, are used according to location.
- GB 34 is used in all cases of Atrophy Syndrome as this is the Influential Point for muscles and tendons in general.
- ST 30 tonifies the Stomach channel and promotes the flow of Qi to all limbs.
- BL 32 and GV 3 stimulate circulation of Qi in the legs.
- GV channel points: The main points used are GV 16 where the GV channel enters the brain, and GV 20, GV 1, GV 3, GV 14 and GV 12.
- Other points are added according to location. Associated use of *Huatuojiuji* points on either side of GV channel often potentiates the treatment.

Other Extra Meridians¹¹

The Girdle Vessel encircles the leg channels and can be used to stimulate the flow of Qi and blood in the leg channels. The points used are GB 41 on the left and TB 5 on the right for men; for women, the sides are reversed. Also ST 36 and BL 23 are stimulated to strengthen leg channels (the Kidney divergent channel connects with the Girdle Vessel at BL 23).

If the muscles on the lateral side of the leg are stiff, the Yin Stepping Vessel is tonified as follows: KI 6 and LU 7 are reinforced in that order; and the Yang Stepping Vessel is reduced by reducing BL 62 and SI 3 in that order.

If the muscles on the medial side of the legs are stiff, BL 62 and SI 3 are reinforced; and KI 6 and LU 7 are reduced.

Scalp Acupuncture

Scalp acupuncture is gaining popularity. This is most useful for paralysis following stroke, but can be used with advantage for patients with degenerative neurologic diseases. There are several zones of treatment, but the major focal point is threading the needle on either side of the GV channel at the level of GV 20, using the motor area; the upper part for the leg and the lower part for the arm. Scalp acupuncture is best applied in the early stages when the movement is still close to normal. The results are often dramatic when the patient moves the limbs while the needles are being manipulated.¹²

Bulbar Paralysis Treatment¹⁰

For swallowing difficulties. The following points are stimulated by the even method: CV 23, CV 24, GV 26, CV 17, SI 17, and LI 18 (local points); PC 6 and LI 4 (distal points); and GB 34 (Influential Point).

For excessive salivation. The following points are reduced: CV 23, CV 24, and ST 4 (local points); LI 4 (distal point); and SP 9 and ST 40 (specific points).

For speech difficulties. The following points are stimulated by the even method: CV 23, CV 24, and ST 4 (local points); HT 5 (distal point as Heart opens to the tongue); and GB 34 (Influential Point).

Points for Underlying Patterns

*Stomach and Spleen Deficiency*¹³. Tiredness, loose stools, sallow complexion, weak limbs, pale tongue, and weak pulse complete the clinical picture. The following points are reinforced: ST 36; SP 3; BL 20 (Back *Shu* point for the Spleen); BL 21 (Back *Shu* point for the Stomach); and CV 12 (Front *Mu* point for the Stomach). Moxa can be applied. The herbal remedy used is *Shen Ling Bai Zhu San* (*Ginseng–Poria–Atractylodes Powder*).

*Liver and Kidney Yin Deficiency*¹³. Dizziness, tinnitus, blurred vision, and dry eyes (due to Liver Deficiency), low-back pain, dribbling of urine (due to Kidney Deficiency), and atrophy of limbs are the features. The tongue is without a coating (due to Yin deficiency) and the pulse is deep. The following points are reinforced: LR 8; KI 3; BL 18 (Back *Shu* point of the Liver); BL 23 (Back *Shu* point of the Kidney); GB 34 (to nourish muscles and tendons); GV 3; and CV 4 (to tonify the Kidney). The herbal remedy used is the *Hu Qian Wan* (Hidden Tiger Pill).

Note. Acupuncturists who are not familiar with pulse diagnosis can still make the diagnosis of the above patterns based on the clinical picture and tongue signs. A pale tongue and a tongue without a coating are not difficult to notice.

Auricular Acupuncture

The following points, according to the presence of tenderness, are selected: spinal motor neurons; corresponding body areas; Medulla Oblongata; Brain Stem; Ear *Shen Men*; Point Zero; Brain; Sympathetic Autonomic Point; Endocrine Point; Occiput; Kidney C; and *San Jiao*.

CASE

Illustrative Case As An Example for Acupuncture Approach

A 55-year-old woman presented with weakness of both legs and her right arm of 4 months' duration. There had been nonspecific symptoms, such as muscle cramps and clumsiness in the affected limbs for several months. These symptoms had become rapidly progressive in the 4 months prior to presentation. Cramping pain was present in both

legs, and this was attributed to spasticity (her pain level was 4–6 in a scale of 0–10).

A physical examination showed weakness of dorsiflexion of both feet (Grade 2), and weakness of grip in the right hand that was Grade 4 (of Grades 0–5, in which 5 is normal and 0 is no movement). Wasting of muscles was apparent at both feet and ankles (see Fig. 1 A and B). Fasciculations were present in both legs and the right arm. Reflexes were exaggerated in both extremities, and there were no sensory signs. Her plantar reflexes were extensor reflexes on both sides. She could move about in the house with her foot drop but could not climb stairs. Her Karnofsky status was 70.

A diagnosis of ALS was confirmed by 2 neurologists on the basis of this patient's clinical presentation, EMG studies (Table 1), and the absence of other laboratory evidence of abnormalities pointing to an alternative diagnosis.

She was treated with riluzole (50 mg P.O. bid) although she did not have any bulbar signs. She was told that her condition was invariably fatal; that made her seek acupuncture treatment.

Chinese Diagnosis

This patient's Chinese diagnosis was as follows:

- Cramping pains in the legs were due to Dampness.
- Fatigue, weakness of muscles, and reduced appetite were due to Stomach and Spleen Deficiency, a diagnosis that was supported by the pale tongue and weak pulse.
- Wasting of muscles and low-back pain were due to Liver and Kidney Deficiency, a diagnosis supported by the patient's dry eyes and deep pulse.

Points Selected

The points selected for treatment were:

- *Upper limbs:* LI 15; LI 11; LI 5; LI 4; LI 10; SI 9; LU 5; and TE 5 (reinforced)
- *Lower limbs:* GB 30; GB 31; GB 34; ST 31; ST 32; ST 36; SP 6; GB 39; ST 41; BL 32; BL 40; BL 57; GB 40; GB 41; and KI 3 (reinforced)
- *Dampness:* SP 6 and SP 9 (even method).
- *Stomach and Spleen Deficiency:* BL 20; BL 21; CV 12; LR 13; ST 36; and SP 6 (reinforced)
- *Liver and Kidney Deficiency:* BL 18; BL 23; LR 8; KI 3; GB 34; CV 4; and GV 4 (reinforced).

Not all points were used in each session. Points were selected on the basis of the presence of tenderness; further reduction in the number of points was achieved by using unilateral stimulation and balancing as explained later in the Discussion section of this article. A sample prescription for one session would be:

- Reinforce BL 23, BL 18, and CV 4 to tonify the Liver and Kidney.
- Reinforce ST 36 and SP 6 to tonify the Spleen and Stomach.
- Reinforce LI 4 right, reduce LU 7 left (the Connecting point/Source point combination). This draws Qi from the Lung channel to the weaker LI channel.
- Reinforce ST 30 and GB 20 to enhance Qi flow in the Stomach and Gallbladder channels.
- Reinforce GB 41 right and TE 5 left to stimulate the Girdle Vessel, which controls Qi flow in the legs.
- Reinforce GB 34 (the Influential point for the muscles).



FIG. 1. (A) Right foot 12/5/14. (B) Left foot 12/5/14.

TABLE 1. NERVE CONDUCTION STUDY 1-23-14

Muscle (innervation)	Interpretation	Spontaneous action			Voluntary action			
		Fib	PSW	Fasc	Amp	Dur	Poly	Recruit
Right FDI (uln ramus profundus c8 T1)	S1 inact Neur	0/10	0/10	0	Normal	+	Normal	Normal
Right EDC (radial C7 c8)	Normal	0/10	0/10	0	Normal	Normal	Normal	Normal
Right triceps (radial c6 C7 c8)	S1 inact Neur	0/10	0/10	0	Normal	+	Normal	Normal
Right biceps (musculocutaneous C5 c6)	Normal	0/10	0/10	0	Normal	Normal	Normal	Normal
Right deltoid (ant) (axillary C5 c6)	Normal	0/10	0/10	0	Normal	Normal	Normal	Normal
Left medial gastroc (tibial S1 s2)	Mod subac Neur	3/10	3/10	0	Normal	+	+	Late
Right medial gastroc (tibial S1 s2)	Mod subac Neur	3/10	3/10	0	Normal	+	+	Late
Left AT (deep peroneal l4 L5)	Mod subac Neur	3/10	3/10	0	Normal	+	+	Late
Right AT (deep peroneal l4 L5)	Mod subac Neur	3/10	3/10	0	Normal	+	+	Late
Left vastus lateralis (femoral L2 L3 L4)	S1 inact Neur	0/10	0/10	0	Normal	+	Normal	Normal
Right vastus lateralis (femoral L2 L3 L4)	S1 inact Neur	0/10	0/10	0	+	+	Normal	Normal

Findings: Reduced bilateral peroneal and tibial compound muscle action potentials. The remainder of the nerve-conduction study is normal. Coincidental, mild, right wrist nerve lesion (carpal tunnel syndrome) with delayed median sensory potentials. Electromyography sampling shows diffuse denervation changes with both active and chronic features in both lower limbs and in the right upper limb. These features would be consistent with anterior horn-cell disease and meet the Awaji criteria for such a disorder.

Fib, fibrillations; PSW, positive sharp wave; Fasc, fasciculation; Amp, amplitude; Dur, duration; Poly, polygraphy; FDI, first dorsal interosseus; EDC, extensor digitorum communis; ant, anterior; gastroc, gastrocnemius; AT, anterior tibialis; inact, inactive; Neur, neuropathy; Mod, moderate; subac, subacute.

This balances left/right, above/below, Yin/Yang, and front/back.

At the next visit, the patient would be examined again, and points would be selected according to tenderness and any other signs, including tongue and pulse signs, and points would be varied accordingly. This is how the patient's body acts as the navigator and directs us toward the destination (improvement).

Equipment Used

All points were stimulated using Pointer Excel II (Lhasa Oms Inc., Weymouth, MA). This is a handheld point locator and stimulator that has two separate control dials for point detection and stimulation, with the following specifications:

- There is a single output channel.
- Frequency is 1–16 Hz adjustable +20%.
- Current output is blue zone on dial (0–2 mA), and black zone (2–45 mA) +20% on 500-ohm loading.
- Pulse width is 260 μ sec.
- Pulse shape is biphasic square wave.
- Pulse mode is continuous.
- The device uses one 9-V battery.
- It has a polarity reversal switch for reduction and tonification. A flashing light and sound indicate when point detection is made. A grounding circuit is made by holding the metal plate on the unit or with the handheld grounding pole.

The method utilized by the author is to make anatomical location of the point first. This is confirmed further by the pointer detection. The point location dial is adjusted to maximum (10), and a search for the point is made using the spring action probe, making sure that the pressure exerted is

minimal and uniform. A flashing light and sound indicate point location. This is confirmed further by pressing the stimulator button at a low-intensity level (adjusting the dial to between 2 and 4). There is usually a definite tingling sensation felt by the patient when point location is made. The point is then stimulated for 30 seconds with the polarity switch at the – or + position for reduction or reinforcement, and the stimulation dial is adjusted to the level of the patient's comfort. The dial is usually set between the levels of tingling sensation and feeling of discomfort.

This is low-frequency equipment (1–16 Hz). The author usually uses 10 Hz; that should be sufficient to provide heat, recovery, enhanced circulation (important for *AhShi* points) and acupoint stimulation. Lower frequencies are used if there is patient discomfort. The author prefers this equipment for various reasons:

- Point location is accurate, using a combination of anatomical location, instrument-assisted point location, and subjective sensation of tingling felt by the patient.
- It is less time-consuming than initial needle-point stimulation and then connecting with electroacupuncture equipment.
- There is a polarity reversal switch that is more definite in its mode of stimulation and does away with needle manipulation.
- It is very easy to train a patient to self-administer the treatment, using this device during breakthrough episodes.

The equipment is designed for body and ear acupuncture. Any user needs to refer to safety precautions and warnings issued by the manufacturer prior to using this device. Average duration of stimulation of each point in this case was 3 minutes.

Nutritional Support

Nutritional support for the patient's nervous system was given in the form of mineral salts, including: calcium phosphate; potassium phosphate; potassium chloride; magnesium phosphate; and sodium phosphate. The dose was 0.5 μg each in combination three times per day. An alcoholic extract of garden daisy (*Bellis perennis*) was also included (5 drops daily) for its regenerating effects.

Acupuncture Treatment

Acupuncture treatment was given twice per week for 8 weeks and then at monthly intervals. After a period of 6 months, a further course of twice-weekly treatments was given for 8 weeks and then one treatment per month, which is being continued as of this writing.

RESULTS

There was considerable symptomatic improvement. The patient started climbing stairs after the first course of treatment (8 weeks). The power of dorsiflexion of the feet became Grade 3, and, subsequently, Grade 4.

Her Karnofsky status became 100. When examined in April 2017, she was totally symptom-free, leading a normal life. As of this writing, she climbs stairs and walks 2 hours

per day. There is no fasciculation. The power of dorsiflexion of both feet became 4–5, and her wasting has marginally improved, more so in the left foot (Figs. 1A, 1B, 2A, 2B). EMG performed in March 2017 showed no significant deterioration from what showed 3 years ago (Tables 1 and 2). The aim of treatment was to provide symptomatic improvement and arrest the progression of this patient's disease. Her symptomatic improvement is near-normalcy as she stated; arrest of progression of the disease so far was evident in the EMG; and the slight reduction of the wasting of her muscles (shown in Figs. 1A, 1B, 2A, 2B) is a bonus.

DISCUSSION

There is no scientifically proven cure for ALS. Acupuncture can help—probably more effectively than any other modality of treatment—in alleviating the distressing symptoms and improving a patient's quality of life (QoL). This is because acupuncture provides direct and immediate stimulus to Qi and Blood in the channels without adverse side-effects.

Effort should be made to reduce the number of points to the minimum possible for each treatment. Unilateral stimulation and balancing of points would help to achieve this goal. Balancing is performed between upper and lower, left and right, Yin and Yang, and front and back. For



FIG. 2. (A) Right foot 8/5/17. (B) Left foot 8/5/17.

TABLE 2. NERVE CONDUCTION STUDY 3-21-17

Muscle (innervation)	Interpretation	Spontaneous act			Voluntary act			
		Fib	PSW	Fasc	Amp	Dur	Poly	Recruit
Right FDI (uln ramus prof c8 T1)	S1 inact Neur	0/10	0/10	0	Normal	+	Normal	Late
Right EDC (radial C7 c8)	S1 inact Neur	0/10	0/10	0	Normal	+	Normal	Late
Right triceps (radial c6 C7 c8)	S1 inact Neur	0/10	0/10	0	+	+	Normal	Late
Right biceps (musculocutaneous C5 c6)	Normal	0/10	0/10	0	Normal	Normal	Normal	Normal
Right deltoid (ant) (axillary C5 c6)	Mod subac Neur	0/10	0/10	1+	++	++	Normal	Late
Left medial gastroc (tibial S1 s2)	Mod subac Neur	3/10	3/10	1+	++	++	Normal	Late
Right medial gastroc (tibial S1 s2)	Mod subac Neur	3/10	3/10	1+	++	++	Normal	Late
Left AT (deep peroneal l4 L5)	Mod subac Neur	3/10	3/10	1+	++	++	Normal	Late
Right AT (deep peroneal l4 L5)	Mod subac Neur	3/10	3/10	0	++	+	Normal	Late
Left vastus lateralis (femoral L2 L3 L4)	Mod subac Neur	0/10	0/10	0	++	+	Normal	Late
Right vastus lateralis (femoral L2 L3 L4)	Mod subac Neur	0/10	0/10	0	+	+	Normal	Normal

Findings: Reduced bilateral peroneal and tibial compound muscle action potentials. The remainder of the nerve conduction study is normal. Coincidental mild right wrist nerve lesion (carpal tunnel syndrome) with delayed median sensory potentials. Electromyography (EMG) sampling shows diffuse denervation changes exhibiting with active and chronic features in both lower limbs and right upper limb. These features would be consistent with anterior horn-cell disease. There have only been minor changes, compared to the EMG performed in 2015 with the denervation changes having more chronic features.

Fib, fibrillations; PSW, positive sharp wave; Fas, fasciculation; Amp, amplitude; Dur, duration; poly, polygraphy; FDI, first dorsal interosseus; EDC, extensor digitorum communis; ant, anterior; gastroc, gastrocnemius; AT, anterior tibialis; inact, inactive; Neur, neuropathy; mod, moderate; sub, subacute.

channel problems, to facilitate the movement of Qi, unilateral stimulation is sufficient and sometimes even better because balancing is easier. To correct Yin deficiencies, bilateral stimulation is preferred. In this patient's case, the channel problems were related to the Stomach and Gallbladder mainly, and, to a lesser extent, the arm Yang channels.

Use is made of channel axes—the Stomach/Large Intestine axis, and the Gallbladder/Triple Energizer axis. In one session, GB 40 and TE 5 can be used on opposite sides; in addition, ST 36 and LI 4 can be used on opposite sides. The two members of the same axis such as the Stomach/Large Intestine axis can be considered as a single channel. For example, ST 38 is used for shoulder pain when the pain is located in the LI channel. If the pain is located in the posterior shoulder (SI channel), the point used would be BL 58 (Small Intestine/Bladder axis). That balances left/right and upper/lower. When Extra Meridians are used, SI 3 on the right and BL 62 on the left will stimulate the GV channel; KI 6 on the left and LU 7 on the right will stimulate the Yin Stepping vessel; and BL 62 on the right and SI 3 on the left will stimulate the Yang Stepping vessel. This is the sequence used in women. In men, the sides are reversed.

If three or more points are reinforced in the GB channel in one session, one has to remember its effect on the Spleen through the control (KO) cycle as it could aggravate Spleen Deficiency. (Gallbladder controls the Spleen). This has to be balanced by reinforcing SP 6 or SP 3. That balances Yin and Yang. Similarly, in this case, the involvement of the right arm required reinforcing many LI channel points and this could have had a reducing effect on the Liver through

the control cycle (Large Intestine controls the Liver). This had to be balanced with reinforcing LR 3 on the opposite side (left). That would have balanced left/right, above/below, and Yin/Yang. (In the Promotion cycle, Yin promotes Yin; in the Control cycle Yin controls Yang and Yang controls Yin.)

Another way would be to reinforce only LI 4 on the right side (the Source point) and reduce LU 7 on the left side (the Connecting point). This would balance right/left and Yin/Yang and would draw Qi from the Lung channel and flow it to the weaker LI channel. This is an example of a Connecting point/Source point combination in a Yin/Yang pair. Such different combinations and balancing can be used in different sessions. Excessive use of Yang points (especially in women) makes the patient edgy; excessive use of Yin points makes the patient tired. Stimulation of Back *Shu* points (BL 18, BL 20, and BL 24 in this case) should be balanced with the use of Front points, such as CV 4 in this patient. These principles were used in selecting points at each session.

Evidence

Although the motor dysfunctions are the main symptoms of ALS, spasticity and associated pain are common, and acupuncture has been shown in studies to be most useful for alleviating these symptoms.¹⁴

Significant neurologic improvements in 2 patients with ALS after acupuncture injection therapy were reported by Liang et al.¹⁵ There are other studies showing beneficial effects of acupuncture in ALS, involving motor functions, in Chinese literature that is not referenced in PubMed. One of

these is by Cheng Yongde who treated 46 patients who had ALS with acupuncture and Chinese herbs and is detailed in an article by Dharmananda.¹² Six patients had clinical remission; for 11, the treatment was markedly effective; for 24, it was fairly effective; and for 5, it was ineffective.

The current case is remarkable in that, after relentless aggravation for 4 months resulting in Grade 2 weakness in both feet—which made climbing stairs impossible and caused considerable difficulty in walking even on level ground—2 months of acupuncture reversed most of this patient's symptoms—spasm, pain, weakness and fasciculation—and she was able to climb stairs and engage in brisk walking for 2 hours every day. This could be labeled as a placebo effect, spontaneous resolution, or a doctor–patient relationship effect. No conclusion can be drawn from a single case; the emphasis here is on the approach to the patient.

Many acupuncturists use scalp acupuncture for ALS; some make use of GV channel and *Huatuojiaji* points. Whichever groups of points are selected—and this includes local points aforementioned—symptoms tend to return fairly soon after cessation of treatment. In the experience of the current author, the additional use of points to correct the associated Disharmony Patterns, and the points used for any other associated additional abnormalities present in a particular patient, often yield long-term favorable results. This was shown in this particular case. The patient had pain in her legs due to Dampness. Points SP 6 and SP 9 were stimulated to reduce Dampness. If she had had a purple tongue, the cause of her pain would have been attributed to Blood Stasis and the points used would have been BL 17 (Back *Shu* point for Blood) and SP 10. She would also have needed reduction of SP 4 and PC 6, in that order, to open the Penetrating Vessel, which is the Sea of Blood. If this patient's symptoms had been triggered by an emotional shock—as happens many times, causing her to have insomnia and palpitations—she would then have needed reduction of points, such as BL 14 (Back *Shu* point of the Pericardium), BL 15 (Back *Shu* point of the Heart), GV 14, HT 5, and HT 7 before any improvement could have been expected, although the emotional shock would only have been a triggering factor and not the cause of the disease. The overall general health of a patient has to be targeted in addition to the specific treatment for the presenting problem.

CONCLUSIONS

“Diseases desperate grown,
By desperate appliance are relieved,
Or not at all”

—*Hamlet*¹⁶
William Shakespeare

Acupuncture cannot have a claim to cure ALS but can be offered with confidence to reduce the symptoms associated with all forms of MND, and improve a patient's QoL. This

needs confirmation by further studies. This illustrative case demonstrated a practical application of the approach.

ALS is a classical example of a disease “desperate grown,” and is usually relentlessly progressive. The symptoms are due to a defective flow of Qi (and Blood) in the involved channels and they need treatment using the channel points. The root causes of the defective flow are the Deficiencies of Kidney, Liver, and Spleen. They have to be identified and corrected. Any other seemingly unrelated Disharmonies present have to be identified and rectified to bring the patient to a state of equilibrium—and a body in equilibrium often heals. All these are quite time-consuming and require dedication on the part of the acupuncturist and patience on the part of the patient. Perseverance usually helps.

In most chronic conditions, acupuncture needs support. A combination of selected mineral salts were given to the current patient to support neurologic regeneration, and the herb *B. perennis* was used to potentiate regeneration further. All of these various steps constituted the “desperate appliance.”

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There are no conflicting interests.

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