

A Suggestion for Treating Amyotrophic Lateral Sclerosis (ALS)

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ABSTRACT

This article reviews the usual methods used to treat amyotrophic lateral sclerosis (ALS) in the West, then discusses some alternative treatments that are being used by practitioners of Traditional Chinese Medicine (TCM). The paper concludes by suggesting that some TCM methods, such as tai chi and qigong, should be considered for the treatment of ALS in conjunction with the current Western methods.

Introduction

There is currently no cure for amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's Disease. There are only treatments, which can alleviate some discomfort and perhaps retard the advancement of the disease. A number of drugs, exercise and physical therapy programs are currently being used in the West to treat this ailment. Traditional Chinese Medicine (TCM) also has a toolbox of treatments that can be used for a wide range of ailments, including ALS. Many studies have examined the use of tai chi and qigong, gentle exercises that include elements of meditation and breathing, to treat diseases and ailments such as anxiety, arthritis, attention deficit, autism, back pain, blood pressure, bone density, cancer, cognitive impairment, depression, fatigue, fibromyalgia, frailty, heart disease, the immune system, insomnia, joint mobility, muscle strength, pain, Parkinson's disease, posture, pulmonary disease, quality of life, schizophrenia, stress, stroke, substance abuse and unilateral vocal fold paralysis [1-16]. A search of several databases failed to find many studies that had been conducted on the treatment of ALS from the perspective of TCM. However, that does not mean that such studies do not exist. They very well might exist, but perhaps they only exist in the Chinese language. This

paper reviews some studies that have been done on the treatment of ALS and similar diseases in the West, then proceeds to discuss some TCM approaches.

Western Treatments for ALS

Western medicine has used exercise physical therapy to treat people who have ALS. However, the lack of clinical trials with large populations has made it difficult to reach definitive conclusions about the effects of exercise on ALS patients [17-19]. (Meng, et al. [20]) examined the results of seven randomized controlled trials involving 322 ALS patients. Those studies found that the patients who exercised showed significant improvement in some areas compared to those who did not exercise. Differences in muscle strength and quality of life were not significant. They concluded that exercise can significantly improve functional ability and pulmonary function of ALS patients. (Lisle, et al. [21]) reviewed several kinds of exercise studies to determine whether various exercises had any beneficial effects on ALS patients. They concluded that there were too few studies on the relationship between exercise and beneficial effects on ALS patients, and that most of the studies in this area

that have been conducted involved small sample sizes, which make results weak. Those studies did show that mild to moderate exercise can have mild to moderate effects on cardiovascular, mental, musculoskeletal and immune systems.

A study by (Clawson, et al. [22]) found that resistance, endurance and stretching/range of motion exercises had a beneficial result on a group of ALS patients. (Ortega Hombrados, et al. [23]) reviewed the results of 10 clinical trials that analyzed the potential short-, medium-, and long-term effects of a therapeutic physical exercise program on the functionality of ALS patients. The conclusion was that therapeutic physical exercise could contribute to slowing down the deterioration of musculature, thus facilitating their performance of daily living activities. (Lewis, et al. [24]) examined the role of physical therapy and occupational therapy in the treatment of ALS. (Rahmati, et al. [25]) examined eight studies involving exercise regimes for ALS patients. There was a significant difference in favor of exercise in functional ability ($P=0.001$), overall quality of life ($P=0.03$) and $Vo2peak$ ($P=0.01$). However, because those trials were of poor quality and had a risk of bias, they concluded that the safety and effectiveness of exercise therapy for ALS patients remains unclear. They suggested that higher quality studies involving larger sample sizes were needed. (Kalron, et al. [26]) conducted a randomized controlled trial of ambulatory patients with ALS that combined aerobic and strength training. (Almeida, et al. [27]) studied the effect of exercise on ALS. (Patel, et al. [28]) studied the effect of nutritional and exercise-based intervention in the treatment of ALS [28]. (Fang, et al. [29]) and (Guo, et al. [30]) studied the effects of repetitive transcranial magnetic stimulation on the treatment of ALS. (Radunovic, et al. [31]) did a study on mechanical ventilation for the treatment of ALS.

Similar Diseases

A number of diseases are similar to ALS. (Garrick [32]) listed 22 of them.

1. Adrenomyeloneuropathy
2. Adult polyglucosan body disease
3. Allgrove AAA syndrome
4. B12 deficiency
5. Benign monomelic amyotrophy
6. Celiac disease
7. Creutzfeldt-Jakob disease
8. Inclusion body myositis
9. Isaac's disease

10. Isolated neck extensor myopathy
11. Kennedy's disease
12. Lyme disease
13. Mitochondrial disorder
14. Multifocal motor neuropathy with conduction block
15. Multiple sclerosis
16. Myasthenia gravis
17. Oculopharyngeal muscular dystrophy
18. Overactive thyroid
19. Paraneoplastic encephalomyelitis
20. Post-polio syndrome
21. Syringomyelia
22. Transthyretin familial amyloid neuropathy

Others have also discussed, compared, and contrasted the similarities and differences of ALS to other neurological diseases [33-35]. What makes these comparisons important is the possibility that a treatment that is successful for one of them might also prove to be effective for other, similar diseases.

Traditional Chinese Medicine

Traditional Chinese Medicine (TCM) has been practiced for thousands of years. It consists of many different techniques and subfields, including herbs, acupuncture, acupressure, tai chi, and qigong. Its emphasis is more on prevention than cure, although specific treatments are used for specific ailments. It was difficult to find any studies that focused on the treatment of Amyotrophic Lateral Sclerosis [ALS] using qigong or other traditional Chinese [more properly referred to as East Asian, because these treatments are popular in Japan and Korea as well as China] medicine therapies. Perhaps that is because not many people have ALS, and it is difficult to collect enough people to conduct a good clinical trial. One good study I was able to find [36] examined and summarized 59 studies that focused on the effect of herbal medicine on the treatment of ALS. Most of those studies were conducted in China; some were conducted in Korea. The most commonly used evaluation tool was the El Escorial criteria. The most commonly used herbal medications were Buzhongyiqitang, Sijunzitanjiawei, and Jianpiyifeitang, which have anti-inflammatory, antioxidant, and protein aggregation effects. They found gaps in the effectiveness of these medications. This study went into a bit of detail regarding which herbs were used, the duration of the treatments and the results that were achieved. Some of the findings were:

1. Improved muscle strength
2. Nonrecurrence after cure
3. Reduced dependence on a ventilator
4. Improved dysphagia, lalopathy and hypotonia
5. Improved facial flushing and sweating
6. Improved low back pain
7. Improved K-ODI and K-ALSFRS-R scores
8. Improved appetite
9. Improved gait and dizziness
10. Decreased salivation
11. Increased body weight, BMI and SNAQ scores
12. Maintaining respiratory function and speech
13. Reduced fatigue, stomach discomfort and constipation
14. Improved mental state
15. Weight gain
16. Improvement of GAS of the weakness of the upper and lower extremities
17. Increased walking distance
18. Decreased CK levels
19. Improvement on choking on liquids
20. Improvement in tongue quality and pulse
21. Increased motor neuron conduction rate
22. Reduction in the probability of fascia fibrillation
23. Improvement in speaking, eating, bed arrangement, running, and stair climbing
24. Slower disease progression
25. Enhancement of motor functions (feeding, clothing, writing, bed emancipation),
26. Improvement in quality of life
27. Improved lung function
28. Improvement in the TCM symptom score and ADL-Barthel Index
29. Improvement in the number of evacuations, stool characteristics
30. Improvement of peak airway pressure
31. Delayed TCM deterioration, spleen deficiency symptoms, shortness of breath and mental fatigue

Tai Chi, Qigong and Multiple Sclerosis

Multiple Sclerosis and ALS have several things in common, which leads to speculation as to whether tai chi or qigong treatments that have been effective in the treatment of MS might also be effective in the treatment of ALS. A number of studies have found that tai chi has a beneficial effect on multiple sclerosis patients. It improves balance, coordination, fatigue and depression. In one case, a woman who couldn't walk and who was confined to a wheelchair was able to start walking and doing tai chi exercises [37]. In one study, eight people with MS were monitored over a two-month baseline and a two-month intervention. The intervention consisted of doing tai chi exercises, there were statistically significant improvement on measures of depression and balance. A 21-item symptom checklist found small improvements over a broad range of other symptoms as well. The National Multiple Sclerosis Society reported that individuals suffering from MS improved balance, heart health and blood pressure as well as improving balance after practicing tai chi [37].

A study of 36 Iranian female MS patients found that practicing tai chi led to significant improvement ($p < 0.05$). They took 2 classes per week for 12 weeks. Each class lasted about 45 minutes. They also practiced at home. The tai chi instructor selected 6 movements from the Yang-24 form, since that was easier than trying to teach them the entire form. The Berg Balance Scale (BBS) was used to check progress. The BBS measured changes in 14 items, such as sitting to standing, standing unsupported, standing to sitting, sitting unsupported, standing with eyes closed, reaching forward with outstretched arms, standing with feet together, etc. (Zou, et al. [38,39]) examined the results of 10 studies of the effect of tai chi on patients with MS. Those studies found significant improvement in balance, pain, emotional well-being, gait, energy, social function, spasms, bladder control, numbness, overall quality of life and walking speed. (Taylor, et al. [40]) conducted a literature search on the effects of tai chi on physical and psychosocial function among individuals with MS. The tai chi interventions averaged 27 sessions conducted over 11 weeks. Those who practiced tai chi had better balance, flexibility and gait, had a better quality of life, and experienced less depression and fatigue than did the nonintervention group. A study that combined several Chinese medicine techniques to treat patients with MS found that they improved in several ways. One of the intervention procedures was to practice ba duan jin, which is a set of qigong exercises [41].

Tai Chi, Qigong and ALS

Although studies that incorporate qigong or tai chi into the therapy program for ALS patients seem to be rare, the use of tai chi and qigong to treat similar ailments, such as MS, seem promising. One interesting feature of both tai chi and qigong is that they have

been used effectively in the treatment of hundreds of diseases and ailments. The reason for that is because both of these tools of Chinese medicine activate the immune system, which always has beneficial effects, no matter what ailment is being treated. Thus, it is quite possible that the use of these two tools might be effective in the treatment of ALS.

Conflict of Interest

None.

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