

Ankylosing Spondylitis Treated with Zhang's Cupping Triple Therapy: A Restrospective Case Series Study

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Received date: 22 March 2023; **Accepted date:** 02 April 2023; **Published date:** 10 April 2023

Citation: Zuobiao Yuan, Yikai Li, Liang Zhang, (2023), Ankylosing Spondylitis Treated with Zhang's Cupping Triple Therapy: a Restrospective Case Series Study, *Clinical Research and Clinical Trials*; 7(3): DOI:10.31579/2693-4779/131

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Abstract:

Ankylosing spondylitis (AS) is a subtype of axial spondylarthritis with radiographic structural damage and without specific treatment.

Keywords: ankylosing spondylitis ; non-medication therapy ; zhang's cupping triple therapy; jiaji acupoints ; acupuncture; infrared lamp

Introduction

Ankylosing spondylitis is a subtype of axial spondylarthritis with radiographic structural damage[1]. Within conventional Western medicine, no specific treatment is currently available. Non-steroidal anti-inflammatory drugs (NSAIDs) and tumor necrosis factor- α (TNF- α) antagonists are the two main categories of conventional pharmaceutical administered. NSAIDs have only about a 12%-15% clinic remission rate in patients with longstanding disease [2, 3]. and the cardiovascular, gastrointestinal, and renal risks of long term treatment is always a concern.[4]. TNF- α antagonists look promising, but discontinuation generally resulted in a relapse in 75%-90% of cases [5, 6].

Non-pharmaceutical therapy is usually safe and has minimal side effects. One example of non-pharmaceutical therapy, acupuncture, has been used in the treatment of ankylosing spondylitis. It has been reported that acupuncture-based therapy can improve up to 95.6% of patients[7, 8]. but in most of these reports, the clinical outcome was mainly symptom improvement, not good clinical control of disease progression.

We have used the Zhang's cupping triple therapy to treat refractory disorders such as asthma, irritable bowel disease and bipolar disorders for more than 30 years[9, 10]. The current retrospective study is to evaluate the effect of Zhang's cupping triple therapy in patients with ankylosing spondylitis.

Objective: To evaluate the efficacy of Zhang's cupping triple therapy in patients with AS.

Methods:

Study design and participants

We performed a single-center, retrospective case series study in a clinic in Munich, Germany. We retrospectively analyzed patients with ankylosing spondylitis who were admitted to the clinic between February 1999 and December 2022. Each patient was diagnosed in local conventional Western hospitals/clinics. Due to the retrospective nature of the study, the requirement of informed consent was waived. Original data for the study were obtained from the medical records in the clinic, including demographics, clinical symptoms, laboratory

examinations, treatment measures, and outcomes. We included all patients with a confirmed diagnosis of ankylosing spondylitis.

Methods:

In this retrospective study, data were collected for all 22 cases of AS in Zhang's clinic in the past 23 years. All patients received Zhang's cupping triple therapy: 2 sessions of cupping on the back, acupuncture in the jiaji points from the level of GV 14 (Dazhui) point to the level of GV3 (Yaoyangguan) point. An infrared lamp was applied during the entire process of cupping and acupuncture.

Intervention

All patients received "Zhang's Cupping Triple Therapy" which is detailed as:

1.1 Electric cupping. The electric cupping machine is recombined from a sputum suction machine and a plastic vacuum cupping machine. The pressure was between minus 0.5 and minus 0.8 atmospheres. The size of cup

varies, depending on the need of shape and area in the skin, usually with an internal diameter of 3.5cm -5.5cm.

Cups were placed on the back, waist and sacrum area. After setting the cups for 10 minutes, a second session of cupping was placed at the other location that the first session did not cover and set for another 10 minutes.

1.2 Acupuncture. One inch acupuncture needles were inserted in the Jiaji points, from the level of GV 14 (Dazhui) point to GV3 (Yaoyangguan) point. For patients with pain in the sacroiliac joint region, needles were added locally. The duration of acupuncture was 20 minutes.

1.3 Infrared light. Infrared therapy was applied in the whole process of cupping and acupuncture. The total voltage is 750 volts, covering the whole back area. The total duration of therapy was about 50 minutes.

Outcomes and measurements

The primary outcome was improvement of pain severity. Pain severity was assessed by visual analog scale (VAS) from 0 to 10, with 0 as no pain and 10 as the worst pain.

Secondary outcomes were other symptoms and functional change, including the Bath ankylosing spondylitis functional index (BASFI) and the Bath ankylosing spondylitis disease activity index (BASDAI).

Statistical analysis

The statistical analysis was performed using the SPSS software (version 23). To test if the data was normally distributed, the Kolmogorov-Smirnov test was conducted. Continuous variables are expressed as means with standard errors or medians with interquartile ranges and analyzed by independent Student's t-test. Categorical variables are reported as frequencies and

proportions and analyzed with a chi-square test or Fisher's exact test. A p value < 0.05 is considered statistically significant.

Patients

A total of 22 patients were assessed in this study. The median age of patients was 34.0 years (IQR 30.0-49.0); the sex distribution was 72.7% (16/22) male vs. 27.3% (6/22) female. 86.4% (19/22) of patients were human leukocyte antigen (HLA)-B27 positive. The time from symptoms onset to the initial visit was 10 years (IQR 2.8-15.0). All patients received NSAIDs such as diclofenac, ibuprofen, arcoxia (22/22, 100.0%), and some also were administered corticosteroids and/or TNF- α antagonists (Table 1).

Primary outcome

On average, after 1 (IQR 1.0-1.0) visit or 2.5 days (IQR 1.0-10.8) of treatment, patients started to feel pain improvement, and 4 (IQR 2.3-6.5) visits or 52.5 days (IQR 20.5-181.3) of treatments to feel pain free. 59.1% of patients were completely pain free (13/22) and 36.4% of patients reported improvement (8/22) at their last visit, with only one case of no change (4.5%). The visual analog scale (VAS) score was reduced from 7.3 \pm 0.3 at the initial visit to 1.4 \pm 0.5 at the last visit (p<0.001, Figure 1). The follow-up time of this study was up to 274 months (22 years 10 months), with a median of 64.5 months (IQR 56.8-93.8 months).

Secondary outcome

We also saw a significant functional improvement after the cupping triple therapy. The BASFI score was reduced from 7.0 \pm 0.4 to 2.3 \pm 0.6 and the BASDAI was reduced from 6.6 \pm 0.4 to 1.3 \pm 0.5 (P<0.001, Figure 2).

Adverse events

We didn't observe any significant adverse events in these 22 patients.

Characteristic	
Age, median, (IQR), yr,	33.5 (30.0-51.8)
Sex	
male, No. (%)	16 (16/22, 72.7%)
female, No. (%)	6 (6/22, 27.3%)
Median time of first symptom to initial visit, (IQR), yr	10 (2.8-15.0)
HLA B27+, No. (%)	19 (19/22, 86.4%)
No. of visits to reach improvement, median, (IQR),	1(1.0-1.0)
No. of visits to reach pain free, median, (IQR)	4 (2.3-6.5)
Time of reaching improvement, median, (IQR), day	2.5 (1.0-10.8)
Time of reaching pain free, median, (IQR), day	52.5 (20.5-181.3)
Treatment	
NSAIDs, No. (%)	22 (22/22, 100.0%)
Corticosteroid, No. (%)	3 (3/22, 13.6%)
TNF- α inhibitor, No. (%)	5 (5/22, 22.7%)

Table 1: Baseline characteristics of study patients

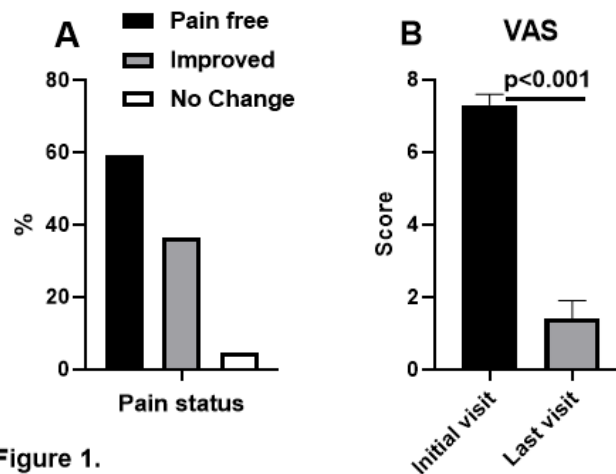


Figure 1.

Figure 1: Change of pain severity after treatment. A: Pain status; B: visual analog scale (VAS). p value is shown in the figure.

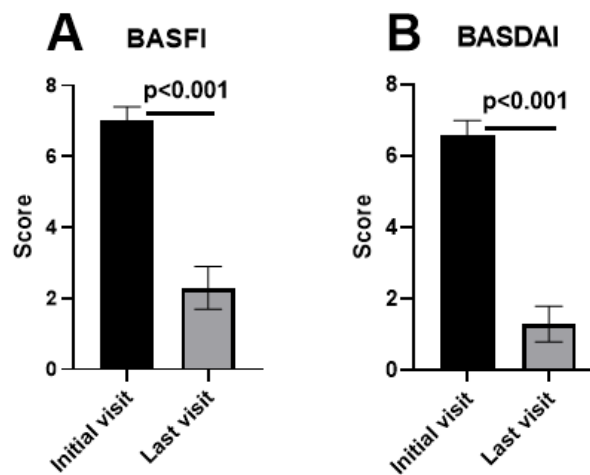


Figure 2.

Figure 2: Change from baseline in Bath ankylosing spondylitis functional index (BASFI) and Bath ankylosing spondylitis disease activity index (BASDAI). p value is shown in the figure.

Results:

59.1% of patients were completely pain free (13/22) and 36.4% of patients reported improvement (8/22), with only one case of no change (4.5%). The visual analog scale (VAS) score was significantly reduced at the last visit compared to the initial visit, and so were the Bath ankylosing spondylitis functional index (BASFI) and Bath ankylosing spondylitis disease activity index (BASDAI). The median follow-up was five years 4.5 months, with the maximum of 22 years 10 months.

Discussion:

Cupping therapy is one of the oldest traditional procedures in holistic folk therapy around the world. [11]. It has been used extensively in Eastern Asia, the Middle East, and Central and Northern Europe to treat ankylosing spondylitis and systematic reviews have examined the evidence for cupping therapy in the treatment of this condition. Examination of 5 randomized controlled trials suggested strong improvements in ankylosing spondylitis symptoms when cupping was added to conventional Western medical treatment, including improvement in the Bath Ankylosing Spondylitis Functional Index (BASFI) and the Bath Ankylosing Disease Activity Index (BASDAI). [12]. Our own clinic observations have demonstrated an almost 60.0% incidence of clinical remission of symptoms, with a follow-up

duration up to 274 months (22 years 10 months). Only 4.5% of cases (1/22) showed no change of clinical symptoms after systemic treatment. In contrast to this, a randomized, placebo controlled, multicenter phase 3 trial of a TNF- α antagonist, certolizumab pegol (CZP), showed a 63.6% response rate, and 25.2% of patients' ankylosing spondylitis disease activity scores (ASDAS) showed inactive disease (clinical remission). [13].

Acupuncture-based therapies have been used in the clinical treatment of ankylosing spondylitis in China. However, most of these reports only show a moderate degree of symptom improvement. Although some reports stated a clinical remission in 72.0% of patients their information about the research design and methodology was insufficient, and data on long-term follow-up on patients was lacking.[14].

The Zhang's cupping triple therapy was developed by Dr. Liang Zhang. Dr. Zhang worked at the teaching hospital of the University of Munich Medical School 30 years ago. At that time, he was referred by the Chairman of the Department of Surgery to treat some patients with modalities from traditional Chinese medicine (TCM). Most of the patients at that time were hoping to avoid surgery or accelerate recovery. Some cases were incurable by conventional Western medicine standards. At that time, there was no Chinese herbal medicine available in Germany, so he could only rely on massage,

Guasha, cupping, acupuncture and other non-pharmaceutical approaches. Dr. Zhang observed that some refractory disorders were difficult to control with only one approach. After continuous exploration and accumulation of clinical experiences, he combined utilization of a vacuum cupping machine, infrared light and acupuncture, and developed the fixed procedure of two sessions of cupping first, followed by acupuncture on Jiaji points, with infrared light during the whole treatment process. This method was later named Zhang's cupping triple therapy, and used in treating multiple complicated disorders such as migraine, lumbar disc herniation, asthma, rheumatoid arthritis and others, with rapid clinical response and a high rate of complete control or improvement effect. It is name cupping triple therapy, instead of infrared lamp therapy, which is mainly because the time of cupping. We do two times of cupping, to cover all possible area related the disease. The cupping therapy can also reach the deep tissue, which is better than the infrared wave.

The mechanism of Zhang's cupping triple therapy is still unclear. The past research literature indicates some potential mechanisms of cupping: promoting clearance of toxins, promoting blood circulation, accelerating metabolism, increasing immunity and activating spinal and sympathetic nerves.[15]. The cupping, acupuncture and infrared light may have synergistic actions in promoting body recovery.

Our study has some limitations. First, the small sample size may not be applicable to a larger population. Second, a single-center, non-controlled case series study does not provide as strong evidence as a multicenter, randomized controlled clinical trial, as indicated in the evidence-based medicine levels of evidence pyramid (<https://academicguides.waldenu.edu/library/health/evidence/evidencepyramid>).

Third, our treatment interval is not fixed, which needs optimization. Fourth, because the treatment interval was not fixed, the exact time of improvement may not be accurate in the present study. As a small private clinic of traditional Chinese medicine, we encourage peers in the Western hospital and clinic systems and in China to collaborate with us to confirm this clinical effectiveness and to benefit more patients both nationally and internationally.

Conclusion:

In this retrospective case series over a twenty-year period, the Zhang's cupping triple therapy has a good clinical outcome for ankylosing spondylitis, with a clinical remission rate as high as 60.0%, and with a low chance of relapse. Based on these observations, it would be of value to conduct an international multicenter randomized clinical trial to confirm the therapeutical effectiveness of Zhang's cupping triple therapy and then, if the results are positive, develop STRICTA guideline-informed protocols for treatment on an international scale. Zhang's cupping triple therapy improves pain severity and functional capacity for AS.

Abbreviations:

AS: ankylosing spondylitis; BASFI: Bath ankylosing spondylitis functional index; BASDAI: Bath ankylosing spondylitis disease activity index; NSAIDs: non-steroidal anti-inflammatory drugs; TNF- α : tumor necrosis factor- α ; HLA: human leukocyte antigen; IQR: interquartile range; VAS: visual analog scale; CZP: certolizumab pegol; ASDAS: ankylosing spondylitis disease activity score.

Acknowledgement:

We thank Dr. Paul. Amieux, at Bastyr University for his constructive reviewing and grammar editing.

References:

1. Sieper J, Poddubnyy D. (2017). Axial spondyloarthritis. *Lancet*, 390(10089):73-84.
2. Sieper J, Klopsch T, Richter M, et al. (2008). Comparison of two different dosages of celecoxib with diclofenac for the treatment of active ankylosing spondylitis: results of a 12-week randomised, double-blind, controlled study. *Ann Rheum Dis*, 67(3):323-329.
3. van der Heijde D, Baraf HS, Ramos-Remus C, et al. (2005). Evaluation of the efficacy of etoricoxib in ankylosing spondylitis: results of a fifty-two-week, randomized, controlled study. *Arthritis Rheum*, 52(4):1205-1215.
4. Song IH, Poddubnyy DA, Rudwaleit M, Sieper J. (2008). Benefits and risks of ankylosing spondylitis treatment with nonsteroidal antiinflammatory drugs. *Arthritis Rheum*, 58(4):929-938.
5. Song IH, Althoff CE, Haibel H, et al. (2017). Frequency and duration of drug-free remission after 1 year of treatment with etanercept versus sulfasalazine in early axial spondyloarthritis: 2 year data of the ESTHER trial. *Ann Rheum Dis*, 71(7):1212-1215.
6. Haibel H, Heldmann F, Braun J, Listing J, Kupper H, Sieper J. (2013). Long-term efficacy of adalimumab after drug withdrawal and retreatment in patients with active non-radiographically evident axial spondyloarthritis who experience a flare. *Arthritis Rheum*, 65(8):2211-2213.
7. Liu X, Kang Q, He C, Guo G. (2021). Clinical observation of using warm acupuncture and moxibustion combined with Yishenjuanbiwan to treat ankylosing spondylitis. *Guangming Journal of Chinese Medicine*, 36(4):597-599.
8. Ma M, Chen F, Chen C. (2021). Clinical Effect of Acupuncture and Moxibustion in the Treatment of Ankylosing Spondylitis. (2000). *Chinese and Foreign Medical Research*, 19(14):173-175.
9. Huang N, Zhang z. Zhang's Cupping Triple Therapy Treating Bipolar Disorder: a Case Report. *Guiding journal of traditional chinese medicine and pharmacology*, 26(2):137.
10. Zhang L. (2017). Zhang's Cupping Triple Therapy for Multiple Intractable Diseases. *Journal of New Chinese Medicine*, 49(12):146-148.
11. Qureshi NA, Ali GI, Abushanab TS, et al. (2017). History of cupping (Hijama): a narrative review of literature. *J Integr Med*, 15(3):172-181.
12. Ma SY, Wang Y, Xu JQ, Zheng L. (2018). Cupping therapy for treating ankylosing spondylitis: The evidence from systematic review and meta-analysis. *Complement Ther Clin Pract*, 32:187-194.
13. Landewe R, Braun J, Deodhar A, et al. (2014). Efficacy of certolizumab pegol on signs and symptoms of axial spondyloarthritis including ankylosing spondylitis: 24-week results of a double-blind randomised placebo-controlled Phase 3 study. *Ann Rheum Dis*, 73(1):39-47.
14. Chen Y. (2002). 50 Cases of Ankylosing Spondylitis Treated Mainly by acupuncture of Pricking and Bloodletting of large volume. *Jiangsu Journal of Traditional Chinese Medicine*, 23(7):35.
15. Hong S, Wu F, Lu X, cai Q, Guo Y. (2011). Study on the mechanisms of cupping therapy. *Chinese Acupuncture & Moxibustion*, 31(10):932-934.



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DOI:10.31579/2693-4779/131

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