Case reports

Acupuncture in the treatment of post viral fatigue syndrome – a case report

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Abstract
This case report concerns the treatment of post viral fatigue (chronic fatigue syndrome) with electroacupuncture. This condition is particularly difficult to treat whether using conventional or complementary therapy. Whilst the treatment did not cure the patient, it appears to have facilitated her return to work and markedly improved her symptoms. There are few publications on acupuncture treatment of this condition and the approach used here has not been reported previously.

Keywords
Post viral fatigue syndrome, chronic fatigue syndrome, electroacupuncture.

Description of the case
Presentation and initial course
This case concerns a 27 year old PE teacher who first presented in November 2003 with a recent influenza-like illness followed by three weeks’ severe tiredness. She also complained of intermittent dizziness and had fainted twice, once on getting out of the bath and once for no apparent reason. Her main reason for attending was to request a sick certificate, which I provided. She was generally fit and well with no history of medical or psychiatric problems. She took no regular medication and had never smoked.

I reviewed her the following week as an emergency as she had developed central pleuritic chest pain and mild tachypnoea. As a precaution, I advised admission to exclude a pulmonary embolus. Investigations were performed including ECG, CXR, and V/Q scan, all of which proved negative, and she was discharged from hospital with a provisional diagnosis of post viral fatigue with outpatient follow up.

She remained severely fatigued with persistent episodes of chest pain and shortness of breath on minimal exercise. She also had episodes of severe lightheadedness but no further faints. She had been unable to work following her initial presentation. Because of her sickness absence, the local authority occupational health department planned a graded timetable for her gradual return to full time work.

However, as soon as she started working alternate short days (9am to 12 noon) in March 2004, she returned to the surgery with a marked exacerbation in her symptoms. I speeded up her clinic appointment and offered a trial of acupuncture in the meantime.

Physical examination and investigations
At her initial presentation, physical examination was essentially normal, with no abnormalities of the cardiovascular or respiratory systems, and no lymphadenopathy or splenomegaly. She was normotensive with no postural BP drop to suggest Addison’s disease. Baseline investigations including pregnancy test, full blood count, urea and electrolytes, random blood sugar and thyroid function tests were all normal. Subsequent examination revealed no significant tender or trigger points in the chest wall or elsewhere to suggest fibromyalgia, and no abnormality in the thoracic spine.

Diagnosis
In view of the chronicity of her condition the diagnosis was post viral fatigue syndrome, although she fulfilled the criteria for chronic fatigue syndrome as her tiredness had lasted for more than six months and was associated with four of the ‘main’ symptoms, including post-exertional malaise, unrefreshing sleep, muscle pain and short term memory impairment.
Case reports

Treatment and outcome

I suggested acupuncture treatment at weekly intervals initially, although this was not always possible due to the patient’s work commitments. She assessed her symptoms at each treatment with a visual analogue scale (VAS) of 0-10. I also asked her to keep a symptom diary and a record of her work pattern (days/hours per week). She recorded the incidence of her main symptoms - chest pain/tightness, lightheadedness, breathing difficulty, and episodes of extreme tiredness (i.e. greater than normal), such as when she needed to stay in bed in the morning, to go to bed in the afternoon or to miss work. A monthly index was calculated as the product of days and symptoms; for example, one symptom for two days scores two, four symptoms for two days scores eight etc. The results are displayed graphically in Figure 1.

The first treatment (on 30/3/04) consisted of deep needling at LI4, LI11, LR3 and ST36 bilaterally, using disposable, sterile needles, 40x0.26mm (Dong Bang). The treatment duration was 15 minutes with no manual or electrical stimulation. She deteriorated slightly for three days then improved slightly for two days, although the tiredness remained unchanged. For the second treatment (20/4/04), I decided to try to mimic the biochemical effects of exercise, as suggested in a review. Needles were placed in LI11 and ST36, and electroacupuncture was given for 15 minutes with a dense-dispersed frequency (2/80Hz) using a AWB-104B machine (Harmony Medical), adjusting the amplitude to a strong but not unpleasant sensation. This treatment was repeated for all the subsequent treatments. I also needled LR3 bilaterally without stimulation, as recommended by Felix Mann (personal communication).

There was an excellent response after the second treatment: her symptoms improved and she felt well enough to restart her work on alternate half days, nine till noon. From the third treatment (26/4/04) onwards, I increased the duration of stimulation to 30 minutes. The improvement was sustained until the fourth treatment (18/5/04), with only one significant episode of symptoms when playing rounders. She had extended her work hours to 1pm on alternate days and her VAS score had fallen to three. By the time of the fifth treatment (14/6/04), she was working four half days per week, as she still needed one day off per week. Her VAS score was 1-2 (see Figure 2). The improvement was sustained until the sixth (12/7/04) treatment, which turned out to be her last.

A subsequent cardiac ultrasound (ECHO), short Synacthen test and exercise ECG were normal. She
started to work daily until 2pm, with a VAS score of three. She cancelled her appointment for treatment one month later: it was unnecessary, and she had other things on her mind as she was due shortly to be married. At a subsequent review for an unrelated problem (27/9/04), she remained well, although not quite back to normal. She was working for three full days and two half days, and planning to start full time soon. Her work pattern is summarised in Figure 3. She was six weeks pregnant!

Figure 2 This figure shows the VAS scores over the first 17 weeks after starting acupuncture treatment.

Figure 3 This figure shows the work record after starting acupuncture treatment.
**Discussion**

Post viral fatigue syndrome or chronic fatigue syndrome (formerly known as myalgic encephalomyelitis) is an increasingly common, debilitating illness, characterised by severe tiredness for more than six months with associated symptoms such as fatiguability, myalgia, memory and concentration problems. Although it can be precipitated by infection by various viruses, particularly the Epstein-Barr virus and the enteroviruses, the exact aetiology remains unknown. When there is a preceding viral illness, as in this patient, the condition is sometimes labelled post viral fatigue syndrome, although chronic fatigue syndrome is the preferred term and with diagnostic criteria agreed by the International Chronic Fatigue Syndrome Study Group (Centers for Disease Control and Prevention).

There are very few effective medical treatments available for chronic fatigue syndrome, as the pathological mechanisms are unknown. The mainstays of treatment are cognitive and behavioural techniques, graded exercise programmes and antidepressant medication. Medication is of limited benefit, although tricyclic antidepressants can improve pain levels and sleep pattern disturbance, and serotonin re-uptake inhibitors can improve tiredness, although clinical trials have produced conflicting results and the benefit is probably small. The condition causes a significant degree of psychological and physical distress to patients and a large financial burden on society.

Despite the increasing frequency of this condition and the relative failure of conventional medicine to offer effective treatments, there are few published reports of alternative treatments, including acupuncture, and certainly no strong evidence of efficacy, although there is anecdotal evidence of benefit. The quality of the trials of alternative treatment of chronic fatigue syndrome and fibromyalgia is generally low.

No biochemical test or imaging technique is diagnostic, although certain abnormalities have been identified, including brainstem hypometabolism on FDG positron emission tomography, autonomic deficit (orthostatic intolerance), immune dysfunction (decreased NK cell activity) and reduced beta-endorphin levels in peripheral blood mononuclear cells.

Case reports by their nature are anecdotal and improvement after treatment may be due to coincidental spontaneous improvement or expectation rather than the treatment. There are, however, several factors in this case that favour causality rather than coincidence. First, in my own experience of this condition, spontaneous improvement or resolution in less than one year from presentation is rare. My four other patients with chronic fatigue syndrome remain severely debilitated several years after diagnosis (average duration four years, range three to six years) and none is able to attend work or school. I suspect that early diagnosis and treatment may well have contributed to this patient’s response to treatment.

The second reason to attribute the improvement to acupuncture is that there is a plausible physiological mechanism. This patient had definite problems with autonomic dysfunction affecting blood pressure control, a problem not mentioned in the diagnostic criteria, but well recognised in this condition. From previous research we know that acupuncture can improve autonomic dysfunction. Acupuncture can also increase central and peripheral levels of beta-endorphin, which has been noted to be low in mononuclear cells in patients with CFS. In this case, I attempted to mimic the beneficial effects of exercise by the use of acupuncture, with low frequency electroacupuncture to increase beta-endorphin levels centrally and peripherally, as this deficiency may well be contributing to the symptoms or possibly the aetiology. Most importantly the patient remains well some eight months after starting treatment.

**Summary**

Electroacupuncture may offer benefits to chronic fatigue syndrome sufferers in addition to other conventional and complementary therapies. It may mimic the physiological effects of exercise and provide an additional treatment option for patients unable to follow or maintain a graded exercise programme.
Case reports

Reference list

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