Neural Therapy in the Treatment of Multiple Sclerosis


ABSTRACT

Objective: To assess the therapeutic potential of neural therapy, a modified form of acupuncture, in multiple sclerosis.

Design: A pilot study followed by a double-blind, placebo-controlled randomized study.

Setting: The Glasgow Homoeopathic Hospital, Glasgow, Scotland.

Patients: An unselected group of 61 new patients referred to the Glasgow Homoeopathic Hospital, suffering from any type of multiple sclerosis, who fulfilled the criteria of Schumacher and had a Disability Status Score (DSS) or Expanded Disability Status Score (EDSS) grade of 1-7.

Intervention: Neural therapy, which is the injection of small amounts of local anesthetic without adrenaline, into specific trigger points in the ankles and around the greatest circumference of the skull.

Main Outcome Measures: Improvements in the Kurtzke scales and the DSS or EDSS assessments.

Results: Sixty-five percent (65%) of the patients in the pilot study (n = 40) and seventy-six percent (76%) of the patients in the double-blind trial (n = 21) benefitted from this treatment as assessed by Kurtzke scale improvements. On long-term follow-up of 2.0 to 3.5 years, more than 50% of the patients continued to show improved Kurtzke scale ratings. Improvements could be rapid. No toxic side effects were noted when injections were administered at a frequency of once or twice weekly or less.

Conclusions: Neural therapy is an effective, nontoxic and inexpensive treatment for multiple sclerosis that can confer both immediate and long-term benefits.

INTRODUCTION

Multiple sclerosis (MS) is a common neurological disease currently affecting about 50,000 people in the United Kingdom. The cause is unknown, although viruses, autoimmune disease, and genetic susceptibility have all been suggested as possible etiologic factors (Davison, 1982; McKhann, 1982). It is also a disease for which, as yet, there is no specific treatment and despite many clinical trials, the capacity of any particular regime to affect the clinical course has been disappointing (Patzold et al., 1982; Noseworthy et al., 1991; Yudkin et al., 1991; Silberberg, 1992; Compston, 1996). Hyperbaric oxygen, while initially appearing as promising (Fischer et al., 1983; Davidson, 1983, 1984) has not proved helpful (Barnes et al., 1985; Neiman et al., 1985; Wiles et al., 1986) and cyclophosphamide (Noseworthy et al., 1991), plasma exchange (Noseworthy et al., 1991), azathiaprine (Patzold et al., 1982;
Yudkin et al., 1991), copolymer 1 (Wolinsky, 1995), and interferon-β-1b (IFNB Study Group, 1995; O’Connor, 1996; Richards, 1996) have been equally disappointing.

Seventeen years ago, an Austrian colleague, Dr. Andreas Pfretschner from Gröbming, who was visiting our hospital introduced us to neural therapy, a technique that had been in use in Germany and Austria since 1928 (Dosch, 1984). This treatment uses small quantities of local anesthetic injected into specific areas of the body, principally old scars and areas that correspond to acupuncture points. According to Dosch, neural therapy either “supplies energy” to damaged tissues or “removes energy blockages,” thereby helping to eliminate previously acquired lesions and promote the body’s self-healing mechanisms (Fig. 1; Dosch, 1974).

MS is not one of the conditions normally treated by the European practitioners of neural therapy. However, the case of a 32 year old patient admitted to hospital with MS demonstrated that it might have a place. The patient had sustained a fracture of the right calcaneus when he was 15 years old that was so painful that for 3 years he could scarcely walk. He developed ataxia at the age of 26 and a diagnosis of MS was made. The patient was walking with difficulty using elbow crutches, was ataxic, and both lower limbs were spastic.

Because the patient’s right heel was still tender, the proposition that in neural therapy the local anesthetic restores cell membrane potentials thus enhancing cellular repair (Dosch, 1974, 1984), was applied and the painful area injected. Although treatment was given for local pain only, the following day, the spasticity of the right leg was markedly reduced. Areas around the left calcaneus were therefore also injected and a similar improvement in tone in the left leg was seen.

After two additional patients with MS were similarly treated with beneficial results, it was decided to conduct a pilot study of neural therapy in MS. In addition to injections into the ankles (Fig. 2), injections were made around the greatest circumference of the head (Fig. 3), a standard neural therapy technique for correcting balance (Dosch, 1984). It proved sufficient to administer one injection to each side of the ankle, just distal to the malleoli.

This article describes a pilot study and a subsequent double-blind trial that were carried out between 1982 and 1984.

**PILOT STUDY: METHODS**

**Patients**

Forty (40) patients, aged 20–61 years, mean 41.2 years, with proven MS as defined by Schumacher et al. (1965) took part in the study. They were the next 40 consecutive patients with MS referred by their general practitioners to the Glasgow Homoeopathic Hospital. All patients had already been seen in other hospitals and the diagnosis had been made prior to referral. All were pursuing a downhill course when first...
seen, as determined by the Kurtzke assessments (Kurtzke, 1965). Duration of the disease ranged from 6 months to 32 years, with a mean of 11.5 years. Seventeen (17) of the patients were male and twenty-three (23) were female.

Twenty-three (23) of the patients suffered from primary progressive MS, three (3) had chronic stable MS and fourteen (14) had relapsing remitting MS. Twenty-eight (28) were ambulatory and twelve (12) were confined to wheelchairs (Disability Status Score [DSS] grade 7 or more; Table 1).

**Treatment**

Treatment was given to all patients. This consisted of injections of local anesthetic (1% lidocaine [lidocaine] hydrochloride without adrenaline) into the medial and lateral aspects of the calcaneus, in the regions of the acupuncture points Kidney 6 and Bladder 62 (Fig. 1; 2.5 mL into each ankle point with the needle adjacent to the periosteum) using a 5 mL disposable syringe and a microlance no. 14 needle. These points were chosen on the basis of the
serendipitous discovery that injections in these areas relieved spasticity and muscle dysfunction. Their use is therefore empirical. Injections were also made around the greatest circumference of the head (0.1 mL at 5-cm intervals, again with the needle adjacent to the periosteum; Fig. 3) using a 2-mL disposable syringe and a microlance no. 18 needle, 14 or 15 points in all. These are standard neural therapy points for treating ataxia and vertigo. Their use in multiple sclerosis appears to have beneficial effects on locomotor function. The total dose did not normally exceed 12 mL. One series of injections was given at the beginning of therapy, and was repeated as required depending on the patient's progress. It was discovered early in the study that repeated injections while the patient was still improving could reverse a previously encouraging response. Injections were therefore not repeated unless there was no response to treatment, or an initial response was not maintained.

Assessments

Neurologic examination based on the Kurtzke assessments (Kurtzke, 1965) were made prior to treatment and at regular intervals thereafter (mean time 3 weeks). Visual function assessments were not made. Video recordings were made to demonstrate motor function and ataxia before and after treatment.

RESULTS

Objective scale improvements were obtained in 26 of the patients (65%) while subjective improvements were reported by an additional 10 patients, 2 of whom deteriorated again 2 weeks and 6 months later, respectively. Improvements in the DSS were obtained in 15 of the 40 patients (37.5%). These results are summarized in Table 1. In all but 2 patients in whom an objective improvement was obtained, a positive reaction was noted within minutes of the first series of injections. In the other 2 no reaction was seen for several days.

Nine (9) of the twenty-three (23) patients with primary progressive MS (39.1%) improved their DSS rating, while 5 of 14 patients with relapsing remitting disease (35.7%), and 1 of 3 with chronic stable disease (33.3%) improved their DSS rating.

The improvement rate was better in the ambulatory patients than in those confined to a wheelchair (46.4% and 25%, respectively). There were more women than men in the wheelchair group (Table 1). If improvements in the ambulatory group only are considered, there was little difference in response between men and women. The improvements as recorded by the video films correlated well with the improvements as assessed by the Kurtzke scales.

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**Table 1. Data for the First 40 Multiple Sclerosis Patients Treated**

<table>
<thead>
<tr>
<th></th>
<th>Ambulatory</th>
<th>Wheelchair</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>28</td>
<td>12</td>
<td>40</td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Type of multiple sclerosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary progressive</td>
<td>14</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>Chronic stable</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Relapsing remitting</td>
<td>12</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Type of improvement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective improvement</td>
<td>23</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>Subjective improvement only</td>
<td>3</td>
<td>7^a</td>
<td>10</td>
</tr>
<tr>
<td>Improvement in DSS</td>
<td>13</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Rapid response</td>
<td>22</td>
<td>2</td>
<td>24</td>
</tr>
</tbody>
</table>

^aTwo patients later regressed.

DSS, Disability Status Score.
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DOUBLE-BLIND TRIAL: METHODS

Patients

This was a randomized, placebo-controlled double-blind trial in which 21 patients took part. They were an unselected group of the next 21 multiple sclerosis patients to fulfil the criteria of Schumacher et al. (1965) to be referred to the Glasgow Homoeopathic Hospital. All had been diagnosed in the neurological departments of other hospitals. There were 12 female and 9 male patients, 18 of whom were ambulatory while 3 required a wheelchair. Ages ranged from 25 to 53 years with a mean age of 40.5 years. Twelve showed a primary progressive course, 2 a secondary progressive course, 4 a relapsing remitting course, and 3 a chronic stable course. All the patients were in a stable or slowly deteriorating condition on entry to the trial and were hospitalized for the 2-week trial period only for the purposes of the trial.

Treatment

The treatment was similar to that used in the pilot study, i.e., injection around the greatest circumference of the skull, and into the ankles just distal to the internal and external malleoli. The active treatment was 1% lignocaine hydrochloride without adrenaline, and the placebo was 0.9% saline.

The code was devised and held by a doctor who prepared the injections but otherwise took no part in the trial. Neither the two doctors conducting the trial, nor the patients, knew which injections were active and which were placebo. The patients were not informed that the injections might be local anesthetic and therefore did not know what to expect in terms of effects. Care was taken to make no suggestion that there might be any change in local sensation and any reference to this was ignored. The majority of the patients (76%) had impaired sensation in their feet and legs. The anesthetic effect wears off quickly and in the case of the skull injections could be assumed to be an effect of injecting around the skull.

Because the pilot study had indicated that response could be rapid and that excessive repetition of the active injections could be counterproductive, the trial was conducted over a period of 2 weeks. A regime was adopted in which patients received two injections per week. In the first week, they were randomly given either two lignocaine hydrochloride injections (group A) or two saline injections (group B), and in the second week all received two lignocaine injections, but it was not known who changed treatment. This protocol kept the number of active and placebo injections to a minimum, avoided masking placebo injections with previously given active injections and gave all the patients the chance of the active therapy.

With the exception of the visual assessments, neurological examinations based on the Kurtzke assessments and the EDSS (Kurtzke, 1983) were carried out on all patients before treatment, after 1 week and after 2 weeks. The results of the examinations were scored as for the pilot study with the exception that the expanded disability status scores were used. Each Kurtzke scale is divided into a number of grades that vary with the function being assessed (Table 3). Video assessments were recorded before treatment and after each set of injections. These were assessed independently by two other practitioners.

After the two trial weeks, the patients were followed up as outpatients 2 weeks later, and then at monthly intervals. The code was not broken until all patients had been treated for at least 1 month.

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>41.6 years</td>
<td>39.9 years</td>
</tr>
<tr>
<td>Sex ratio</td>
<td>5M:6F</td>
<td>4M:6F</td>
</tr>
<tr>
<td>Duration of disease</td>
<td>9.2 years</td>
<td>12.1 years</td>
</tr>
<tr>
<td>Diagnosis confirmed</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Requiring wheelchair</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Previous steroids</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Current drugs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steroids</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Mean EDSS</td>
<td>4.6</td>
<td>4.2</td>
</tr>
<tr>
<td>Type of multiple sclerosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary progressive</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Secondary progressive</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Relapsing remitting</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Chronic stable</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

EDSS, Expanded Disability Status Score.

*See text for description of Groups A and B.
The differences between the groups were analysed by the Mann-Whitney $U$ test and the Wilcoxon signed ranks test (Siegel, 1956).

Ethical approval was obtained from the ethical committee of the Greater Glasgow Health Board.

**RESULTS**

There were 11 patients in group A and 10 in group B. Nine of the 21 patients had previously had steroids and 3 were still on steroids on entry to the trial. Six others were on nonsteroidal medication, analgesics, muscle relaxants, and in one case, antibiotics for recurrent urinary infections. The pretreatment comparison of the 21 patients in groups A and B is shown in Table 2. Despite these treatments, the patients' conditions were stable or were deteriorating on entry to the trial.

At the end of the first week of treatment, 8 of 11 patients in group A and 1 of 10 in group B had improved in one or more function; at the end of the second week, when all the patients had had active treatment, 10 in group A and 6 in group B had improved in one or more function. Thus, at the end of the 2-week trial period, 16 of 21 patients had responded to treatment, 15 while receiving active injections and 1 while on placebo. Five patients did not show any response in any functional system.

There was 1 Kurtzke scale grade improvement in group B in the first week compared with 30 in the same group in the second week. The corresponding improvements in group A were 32 Kurtzke scale grade improvements in the first week and an additional 23 (total 55) by the end of the second week (Table 3). The differences between groups A and B at the end of week 1 are statistically significant ($p < 0.01$) as are those between group B at the end of week 1 and the same group on active treatment at the end of week 2 ($p < 0.01$). There was no significant difference between Group A at the end of week 1 and Group B at the end of week 2, after both groups had had 1 week of active treatment. While group A improved further after the second week, the improvements were not statistically significantly better than those obtained in the first week. The greatest improvements occurred rapidly in the first few days of treatment.

Three patients in group A improved their EDSS rating by 1-2 points after 1 week, 1 improved further after week 2, and 1 other patient improved only after week 2. Therefore 4 of the 11 patients in group A improved their EDSS rating by 1-2 points. Three patients in Group B improved their EDSS rating after a treatment of 1 week by 1-3 points.

The blind ratings of the video records by the two independent colleagues were in complete agreement with the results as assessed by the Kurtzke functional scales.

The improvements obtained in the various functions in the 21 patients in the double-blind trial and the 40 patients in the pilot study are
compared in Table 4. The improvement rates in the two trials are similar.

LONG-TERM FOLLOW-UP

Overall, of the 61 patients in the two studies, 42 (69%) improved. Twenty-two (22) patients (36%) obtained DSS or EDSS rating improvements, the rest having functional grade improvements only. They were followed up for periods of 2.0 to 3.5 years with injections being administered according to clinical need. Over this period 6 patients deteriorated, leaving an overall long-term improvement in 36 (59%), with 18 (29%) improved on the DSS or EDSS ratings. Improvement rates were similar in all forms of multiple sclerosis.

RESULTS OF OVERTREATMENT

While no toxic effects were observed using neural therapy, it is possible to overtreat, with untoward effects. Two patients who were seen early in the pilot study experienced increased spasticity of the muscles. In one case, this was reversed by discontinuing therapy and the patient then continued to improve. In the other case, however, the increased spasticity was not reversed. Whether this was occasioned by the neural therapy or was the result of the natural progression of the disease could not be ascertained.

It is therefore recommended that once improvement is obtained, further treatment is not given unless the patient shows signs of relapse. If there has been no improvement after three sets of injections, it is unlikely that the patient will respond to this therapeutic approach. Normally injections are given in the heels only on the second and subsequent visits. Injections around the skull are not repeated unless balance has deteriorated markedly.

DISCUSSION

The results of the preliminary study were encouraging and were confirmed by the double-blind trial. Neural therapy was more effective than hyperbaric oxygen in all parameters except nystagmus (Davidson, 1983, 1984; Fischer et al., 1983; Barnes et al., 1985; Nieman et al., 1985; Wiles et al., 1986). In contradistinction to hyperbaric oxygen, neural therapy could act

<table>
<thead>
<tr>
<th>Table 4. Comparison of Number of Patients Improving in the Pilot Study and in the Double-Blind Study After 2 Weeks</th>
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</thead>
<tbody>
<tr>
<td><strong>Function</strong></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Mental and cerebral</td>
</tr>
<tr>
<td>Brain stem</td>
</tr>
<tr>
<td>Pyramidal</td>
</tr>
<tr>
<td>Cerebellar</td>
</tr>
<tr>
<td>Sensory</td>
</tr>
<tr>
<td>Bowel and bladder</td>
</tr>
<tr>
<td>Other functions</td>
</tr>
<tr>
<td>DSS/EDSS</td>
</tr>
<tr>
<td>Overall improvement all patients</td>
</tr>
<tr>
<td>Ambulatory patients DSS/EDSS 0-6</td>
</tr>
</tbody>
</table>

The grades for each function are the same as for Table 3.
DSS, Disability Status Score; EDSS, Expanded Disability Status Score.
rapidly, with effects being seen in many cases within minutes of the injections. It is therefore often possible to predict which cases are likely to respond. The length of time for which improvement is maintained varies considerably from patient to patient, ranging from a few days to weeks, months, or even longer. In general, each subsequent improvement lasts longer than the previous one.

Trials with cyclophosphamide, (Noseworthy et al., 1991), azathiaprine, (Patzold et al., 1982; Yudkin et al., 1991), copolymer 1 (Wolinsky, 1995) and interferon-β-1b (IFNB Study, 1995; Richards, 1996; O'Connor, 1996) have as their main outcome measures reduction in relapse rate and prevention of further deterioration. Functional improvements were not reported. It is therefore difficult to compare these studies directly with the present one in which outcome measure was improvement in the individual Kurtzke scales and DSS or EDSS ratings, with concomitant improvements in patient function. Because neural therapy can produce statistically significant improvements in function in the seven systems assessed and in the DSS/EDSS ratings, with concomitant improvements in patient function. The double-blind trial confirmed the rapid effect of neural therapy on the symptoms of multiple sclerosis. Work by Davis and Schauf (1981) and Schauf and Davis (1981) has shown that changes in temperature and ionic concentration can have a rapid effect on the conduction velocity of demyelinated nerve fibers and on their ability to transmit nerve impulses. It is possible that neural therapy acts by restoring conduction capacity in demyelinated but otherwise intact axons and the efficacy of the treatment in any given patient may depend on the proportion of axons in this state. According to Dosch (1974) lignocaine acts by repolarizing and stabilizing depolarized cells (Fig. 1). If this is so, then one possible action of neural therapy would be in line with the observations of Schauf and Davis (1981) and could explain why the effect can be surprisingly rapid.

Individual response patterns vary and treatment must be tailored to each patient. Neural therapy was more effective in the ambulatory patients than in those already confined to a wheelchair. This observation is again in line with the findings of Schauf and Davis (1981), because the more severely affected the patient, the less likely are any of the axons to be intact. Neural therapy is inexpensive, quick, and easy to administer, does not require expensive apparatus, and is apparently free from side effects provided that patients are not overtreated. No infection or significant bleeding has been observed. Repeated injections may, in the long term, cause mild scarring that might reverse the benefit, although European experience does not substantiate this, nor has it been noted in over 300 patients who have now been followed-up for 12 years or more in our clinics.

The possible relationships between neural therapy and acupuncture deserve further
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study. Some of the points used in this work are near classic acupuncture points. Modern ideas about acupuncture suggest that it too may act by affecting electrical charges on cell membranes and so may act similarly to neural therapy. Further studies with neural therapy in relation to acupuncture points may lead to a greater accuracy in the siting of injections and to the possibility of the rapid reversal of the effects of overtreatment.

In the light of recent problems in the United Kingdom with regard to National Health Service government funding of treatments for multiple sclerosis, neural therapy has the advantage of being a cheaper alternative to interferon-β 1b and copolymer 1. While not a cure for multiple sclerosis, it has the ability to improve function in about 60% of multiple sclerosis patients, to maintain their ability to work, and in some cases has enabled a return to work.

The time taken to administer a series of injections is not great, 5 to 10 minutes, and although a degree of skill is required, most doctors can be trained to use the methods described here in two to three teaching sessions. It is important, however, to bear in mind the possibility of overtreatment, an aspect that cannot be too strongly emphasised.

Although this work was carried out between 1982 and 1984 and produced significantly better results than any other therapies available at the time, we delayed publication until we had the opportunity of assessing the long-term (12+ years) results of this innovative approach to multiple sclerosis. Because this long-term assessment has confirmed the positive benefits of neural therapy in over 300 patients and has shown that these benefits have been maintained in the majority of the patients, and because orthodox approaches to multiple sclerosis still do not offer significantly greater benefits, we are now in a position to publish this intriguing study.

ACKNOWLEDGMENTS

The authors would like to thank Dr. Andreas Pfretschner for introducing them to neural therapy; Drs. David Reilly and Brian Kennedy for their assistance in holding the code, preparing the injections, and assessing the video records; Dr. Harper Gilmour for statistical advice, and the late Dr. James McGregor for technical advice.

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354 Albert Drive
Glasgow G41 5PF
Scotland, United Kingdom
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