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ORIGINAL PAPER

Healthcare provided by a homeopath as an adjunct to usual care for Fibromyalgia (FMS): results of a pilot Randomised Controlled Trial

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Objectives: **To assess the feasibility of a Randomised Controlled Trial (RCT) design of usual care compared with usual care plus adjunctive care by a homeopath for patients with Fibromyalgia syndrome (FMS).**
Methods: **In a pragmatic parallel group RCT design, adults with a diagnosis of FMS (ACR criteria) were randomly allocated to usual care or usual care plus adjunctive care by a homeopath. Adjunctive care consisted of five in depth interviews and individualised homeopathic medicines. The primary outcome measure was the difference in Fibromyalgia Impact Questionnaire (FIQ) total score at 22 weeks.**
Results: **47 patients were recruited. Drop out rate in the usual care group was higher than the homeopath care group (8/24 *vs* 3/23). Adjusted for baseline, there was a significantly greater mean reduction in the FIQ total score (function) in the homeopath care group than the usual care group (−7.62 *vs* 3.63). There were significantly greater reductions in the homeopath care group in the McGill pain score, FIQ fatigue and tiredness upon waking scores. We found a small effect on pain score (0.21, 95% CI −1.42 to 1.84); but a large effect on function (0.81, 95% CI −8.17 to 9.79). There were no reported adverse events.**
Conclusions: **Given the acceptability of the treatment and the clinically relevant effect on function, there is a need for a definitive study to assess the clinical and cost effectiveness of adjunctive healthcare by a homeopath for patients with FMS.** *Homeopathy* (2009) **98**, 77–82.

Keywords: Fibromyalgia syndrome; Homeopathy; Randomised Controlled Trials

Introduction

Fibromyalgia syndrome (FMS) is a chronic musculoskeletal pain disorder of unknown aetiology characterised by widespread pain and muscle tenderness, often accompanied by fatigue, sleep disturbance and depressed mood.[1] FMS accounts for 15% of outpatient rheumatology visits and 5% of general medicine visits.[2] The prognosis for symptomatic recovery is poor and adequate symptom control is the treatment goal.[3] A wide range of interventions is used in the management of FMS (antidepressants, analgesics, exercise, cognitive behavioural therapy, education, dietary interventions[3]) but there is no clear evidence based treatment of choice; the recent European League Against Rheumatism (EULAR) guidelines[4] are based more on expert opinion than evidence from Randomised Controlled Trials (RCTs).

Patients suffering from FMS have high rates of Complementary and Alternative Medicine (CAM) use,[5,6] and report use of a wide range of CAM therapies for symptom relief and support. Research using homeopathic medicines has shown promising results in the treatment of FMS.[7,8]

Prior to this study there have been two RCTs[7,8] of the efficacy of homeopathic medicines in the treatment of FMS. A randomised double blind cross over study[7] of patients meeting the criteria for a single homeopathic remedy, *Rhus toxicodendron* 6c, reported greater improvements in

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the number of painful tender points and sleep after one month on active homeopathic remedy compared to placebo. More recently, a double blind randomised parallel group placebo controlled trial[8] of homeopathy was conducted in the USA. The homeopathy intervention involved a series of three consultations with a homeopath plus an individually tailored homeopathic remedy or an indistinguishable placebo. This study demonstrated that six months of verum individualised homeopathic remedy was significantly better than placebo in lessening tender point pain and improving the quality of life and global health of FMS sufferers.[8]

Both RCTs[7,8] compared homeopathic medicine to placebo medicine providing information as to the efficacy of homeopathic medicine. But informed clinical decision making about homeopathic treatment for FMS patients needs evidence of the comparative clinical effectiveness of healthcare by a homeopath as well as the efficacy of homeopathic medicines alone.[9] Healthcare by a homeopath is best understood as a complex intervention[10] consisting of a series of in depth interviews with a focus on the patient's subjective experience, plus individually tailored homeopathic medicines.

We report the conduct and results of a RCT comparing the clinical effectiveness of adjunctive healthcare by a homeopath for patients diagnosed with primary FMS.

Aims

This study was designed to:

(A) Assess the feasibility of the design, including referral, randomisation, outcome measures, follow up at 22 weeks.

(B) Obtain data on recruitment rates, drop out rates and changes in outcome measure scores to facilitate a power calculation for a full study.

Methods

Design

This study tested the feasibility of an open pragmatic parallel group RCT design. The objective of the RCT was to assess the clinical effectiveness of usual care, compared to usual care plus adjunctive care by a homeopath, for NHS patients with a diagnosis of primary FMS who were under the care of consultant rheumatologists.

Participants

Patients were referred to the study by consultant rheumatologists at Barnsley Hospital NHS Foundation Trust (BHNFT). Patients who gave informed consent were enrolled to the study by the research nurse.

Inclusion criteria

Adults who had received a diagnosis of primary FMS according to the American College of Rheumatology (ACR) criteria.[11]

Exclusion criteria

Pain from traumatic injury or structural disease, rheumatoid arthritis, inflammatory arthritis, autoimmune diseases, immunosuppressant treatment, oral steroid treatment, acupuncture treatment, homeopathic treatment, substance abuse, primary psychiatric diagnosis or illness, chronic sedative use, pregnancy or lactation.

Based on the literature[12–15] we calculated that a sample size of 20 participants in each group would be sufficient to detect a difference in the Fibromyalgia Impact Questionnaire (FIQ) total scores between the two groups with a significance level of 5% and 80% power. Allowing for a drop out rate of 20% a sample size of 48 (24 in each group) was needed.

Randomisation

The randomisation protocol was created by an independent statistician (Young, University of Sheffield) using an SPSS random number generator and block randomisation. Patients who met the inclusion criteria were given a consecutively numbered opaque sealed envelope containing their group assignment.

Intervention

The usual care group received one or more of the following: physiotherapy, aerobic exercise, analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), anti depressants. The homeopath care group received usual care plus an initial one hour in depth interview followed by up to four 30 min in depth interviews (4–6 weeks apart) with individually tailored homeopathic medicines prescribed at each interview.

Consultations with the two study homeopaths (CW & JR) were conducted in the rheumatology department at Barnsley Hospital (BHNFT). Both study homeopaths jointly agreed on every remedy selection, similar to a previous RCT.[8]

Masking

As this was an open pragmatic study, there was no requirement, (nor was it feasible) for either the patients or the clinicians to be masked to treatment allocation. Assessment of the non-patient reported outcome Tender Point Count (TPC) was conducted by an independent assessor (research nurse) who was masked to group allocation.

Outcome measures

The primary outcome measure was the difference between the groups at 22 weeks in the Fibromyalgia Impact Questionnaire (FIQ) total score. Reviews have identified the FIQ as the main outcome measure for RCTs of FMS.[4,16,17] It is a brief, validated 10-item instrument that measures physical functioning, work status, depression, anxiety, sleep, pain, stiffness, fatigue and wellbeing.[18] The FIQ score is a composite score for functional status, pain, sleep, fatigue, stiffness, anxiety and depression.

The secondary outcome measures in this trial were the differences between the homeopath care group and the usual care group at 22 weeks as measured by the FIQ subscores: pain, fatigue, tiredness on awakening score, stiffness scores; the McGill Pain Questionnaire,[19] Measure Your Medical Outcomes Profile (MYMOP) – a patient generated outcome measure where patients choose the two symptoms

that bother them the most and score them on a 7 point Likert scale,[20] EQ–5D quality of life score,[21] Hospital Anxiety and Depression scale (HADS),[22] and TPC.

A high Tender Point Count (TPC) is part of the diagnosis of FMS[2] and has been used as an outcome measure in clinical trials of FMS. At baseline, 12 weeks and 22 weeks, patients completed the outcome measures and a TPC was performed by the research nurse.

Analysis

The planned analysis was an intention-to-treat comparison of the primary outcome at 22 weeks post randomisation. Analysis looked for a statistically and clinically significant difference between the usual care group and the homeopath care group, between the baseline and 22-week scores in the outcome measures, adjusted for baseline scores by analysis of covariance (ANCOVA).

Group scores at 22 weeks were compared using unpaired *t*-tests and ANCOVA to adjust for baseline scores and homeopath care group using complete case analysis scores. Change from baseline assessment was assessed using a one sided *t*-test and comparison to zero for each group.

Results

Sample characteristics

72 patients were referred to the RCT (68 patients were referred by 3 consultant rheumatologists and 4 patients self referred) during a period of 44 weeks. Of these 72 patients, 18 were not interested and 7 were ineligible (3 did not meet the ARC criteria, 3 were excluded due to concomitant morbidities – arthritis, autoimmune disease, Crohns disease, 1 was receiving acupuncture treatment). In total 47 patients were recruited and subsequently randomised (Figure 1).

Participants were predominantly female and Caucasian (Table 1). The two groups did not differ significantly in their demographic characteristics or baseline scores (Tables 1 and 2) at baseline.

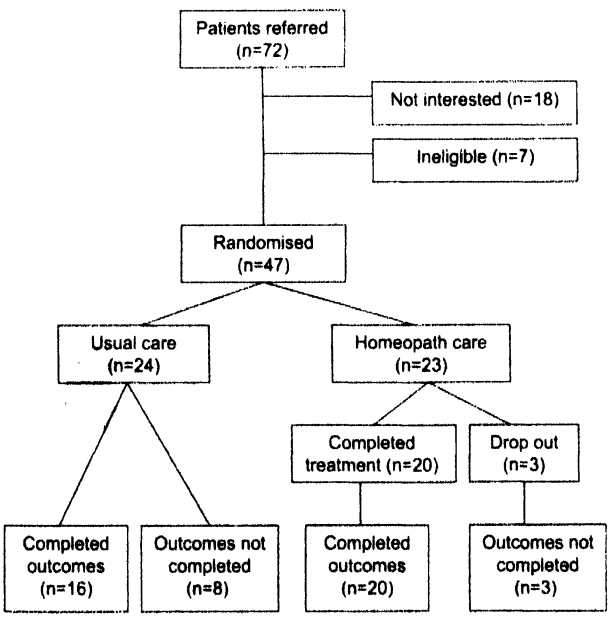

Figure 1 Participant flow.

Table 1 Baseline characteristics

	Group	
	Usual care (n = 24)	*Homeopath care (n = 23)*
Age, yrs	47.4 (9.2)	43.9 (8.9)
Number of women (%)	22 [91.6%]	22 [95.7%]
Ethnicity (no. White, %)	24 [100%]	22 [95.7%]
Age left full time education (yrs)	16.1 (1.4)	16.9 (1.9)
Number of dependants at home	0.9 (1.3)	0.9 (1.2)
Duration of FMS (yrs)	8.5 (7.2)	6.3 (5.1)

Data presented as mean (SD) or *n* [%].

The mean baseline FIQ total baseline scores (0–100) for both groups in this RCT were significantly higher (65) than the range of FIQ total scores (42–58) reported in recent reviews[4,16,17] of FMS treatments (Table 2).

Drop out rates

Interim 12-week outcomes were completed by 41/47 (87.2%) of patients (4/24 patients in the usual care group and 2/23 patients in the homeopath care group did not complete the interim outcomes).

Final 22-week outcomes were completed by a total of 36/47 (76.6%) patients (Figure 1). 8/24 patients in the usual care group did not complete 22 week outcomes and 3/23 patients in the homeopath care group did not complete treatment with the homeopath (one patient emigrated, two gave no reason). No outcomes were obtained for these patients. There was no statistically significant difference in the proportion of trial non-completers between groups (usual care 8/24, homeopath care 3/23, $p = 0.17$) and no differences in FIQ total scores at baseline between completers and those who did not complete the trial (mean (SD) 65.4 (19.6), 63.9 (13.8), $p = 0.82$, completers and non-completers, respectively). There were no reports of any serious adverse events.

Outcome completers (22 weeks)

Following adjustment for baseline, there was a statistically significantly greater reduction in the primary outcome measure (FIQ total score) in the homeopath care group compared to the usual care group (Table 3). The FIQ total score range is 0–100, with 100 being the worst score possible.

There were significantly greater reductions in the homeopath care group in the FIQ Fatigue score and the FIQ tiredness upon waking score, as well as pain as measured by the McGill Visual Analogue Scale (VAS), compared to the usual care group. Both the McGill Affective and Sensory scores and Affective scores showed a trend towards a significant difference between the groups. There was no significant difference in TPC between the groups at 22 weeks.

When the change in scores for each group was compared to zero, using a 1-sample *t*-test, the homeopath care group reported a significant increase in FIQ number of days they felt good, and significant decreases in FIQ total, FIQ tiredness on waking and FIQ Fatigue scores, in addition to pain as measured by the McGill VAS. In contrast the usual care group reported a significant increase in their McGill

Table 2 Outcome measure scores at baseline and 22 weeks

	All participants at baseline		*Completers at baseline*		*Completers at 22 weeks*	
	Usual care (n = 24)	*Homeopath care (n = 23)*	*Usual care (n = 16)*	*Homeopath care (n = 20)*	*Usual care (n = 16)*	*Homeopath care (n = 20)*
FIQ score						
Total (0–100)	65.4 (16.7)	64.7 (20.1)	64.9 (18.2)	65.8 (20.9)	68.5 (19.4)	58.2 (22.3)
Number days felt good (0–10)	1.79 (1.59)	2.48 (2.11)	1.81 (1.56)	2.30 (2.20)	1.88 (1.86)	3.25 (1.97)*
Pain (0–10)	7.4 (1.9)	6.8 (2.4)	7.5 (2.0)	6.9 (2.4)	7.6 (2.2)	6.6 (2.5)
Fatigue/Tiredness (0–10)	8.4 (1.4)	8.3 (1.9)	8.3 (1.4)	8.5 (2.0)	8.3 (2.0)	7.2 (2.1)
Tiredness on waking (0–10)	8.3 (2.0)	7.9 (2.6)	8.2 (2.3)	8.4 (2.2)	8.6 (1.8)	7.1 (2.1)*
Stiffness (0–10)	7.9 (1.9)	6.8 (2.9)	7.8 (2.2)	6.9 (2.9)	8.4 (1.7)	6.6 (2.7)*
TPC						
Score (0–18)	14.9 (3.5)	14.13 (3.9)	15.1 (3.1)	14.3 (4.0)	14.6 (3.0)	13.4 (3.8)
HADS						
Total (0–42)	22.1 (7.8)	20.3 (8.6)	22.4 (8.4)	20.8 (8.9)	22.2 (7.9)	19.1 (9.7)
Anxiety (0–21)	12.3 (4.5)	11.4 (4.4)	12.3 (4.9)	11.7 (4.6)	12.2 (4.2)	10.7 (5.0)
Depression (0–21)	9.9 (4.1)	8.9 (4.6)	10.1 (4.3)	9.2 (4.7)	10.0 (4.4)	8.4 (5.1)
EuroQol-5D score						
Total (–0.5–1.0)	0.32 (0.4)	0.31 (0.4)	0.35 (0.33)	0.30 (0.37)	0.28 (0.33)	0.37 (0.33)
MYMOP score						
Symptom 1 (0–6)	4.7 (1.1)	4.5 (1.0)	4.7 (1.2)	4.6 (1.0)	4.3 (1.4)	3.9 (1.2)
Symptom 2 (0–6)	4.6 (1.2)	4.7 (0.9)	4.6 (1.3)	4.7 (1.0)	4.3 (1.3)	3.9 (1.5)
Wellbeing (0–6)	4.2 (1.3)	3.7 (1.6)	4.19 (1.3)	3.8 (1.5)	4.1 (0.9)	3.4 (1.6)
McGill pain score						
Sensory (0–33)	19.7 (8.4)	19.7 (7.4)	19.2 (9.2)	20.7 (7.3)	20.6 (9.7)	17.7 (8.5)
Affective (0–12)	5.7 (3.6)	4.8 (3.5)	5.2 (4.0)	5.1 (3.6)	6.5 (3.6)	4.5 (3.5)
Sensory + Affective (0–45)	25.4 (11.5)	24.5 (9.9)	24.4 (12.7)	25.7 (9.8)	27.1 (12.5)	22.2 (11.5)
VAS (0–100)	77.5 (17.9)	76.5 (17.0)	73.4 (20.4)	76.3 (17.9)	78.1 (19.7)	64.1 (24.3)†

Data presented as mean (SD); unpaired *t*-test, control vs treatment.
* $p < 0.05$.
† $p < 0.10$.

Affective scores. There were no significant differences in any other secondary outcome measure (Table 2).

Intention-to-treat analysis allowing for missing data

Final 22-week data was missing for 11 patients (3 in the homeopath group and 8 in the usual care group). We conducted a further intention-to-treat analysis on all outcome measures and to allow for missing data we used last value carried forward to estimate the missing values. There was no significant difference between the groups with regards to FIQ pain scores. However, there was still a statistically significantly greater reduction in the primary outcome measure (FIQ total score) in the homeopath care group compared to the usual care group adjusting for baseline scores (Table 4) as well as a significant change from baseline for the homeopath group for the primary outcome measure FIQ total score (Table 4).

Table 3 Change in outcomes at 22 weeks (completers, adjusted for baseline)

Outcome measure (range)	*Group*	
	Usual care (n = 16)	*Homeopath care (n = 20)*
FIQ		
Total score (0–100)	3.63 (12.1)	–7.62 (15.4)‡,♭
Pain (0–10)	0.16 (2.41)	–0.38 (2.56)
Number of days felt good (0–10)	0.06 (2.21)	0.95 (1.79)†
Fatigue score (0–10)	0.03 (1.69)	–1.3 (2.11)*,♭
Tiredness on waking score (0–10)	0.38 (1.47)	–1.30 (2.09)*,♭
McGill pain questionnaire		
Affective score (0–12)	1.31 (2.27)†	–0.55 (3.62)†
Sensory + Affective score (0–45)	2.69 (7.43)	–3.50 (10.56)†
VAS (0–100)	4.69 (25.05)	–12.20 (21.36)*,♭

Data presented as mean (SD).
* $p < 0.05$; unpaired *t*-test, usual care vs homeopath care.
‡ $p < 0.05$; ANCOVA, following adjustment for baseline, usual care vs homeopath care.
♭ $p < 0.05$, 1-sample *t*-test, intra-group comparison to zero, where zero equals no change.

Discussion

This study did not explore the question 'Do the homeopathic medicines work better than placebo?' or 'Is the effect due to the time and attention spent with the patient?', rather this study tested the feasibility of a method of assessing the clinical effectiveness of adjunctive healthcare by a homeopath in addition to usual care, compared with usual care only.

Feasibility of the design

The number of referrals to the study from the rheumatology clinic was slower than anticipated (one patient per week). Of the 65 who were eligible, over a quarter refused to take part in the study. We do not know the reasons for non-participation or how much the information that patients

Table 4 Change in FIQ outcomes at 22 weeks (intention-to-treat, adjusted for baseline)

Outcome measure (range)	*Group*	
	Usual care (n = 24)	*Homeopath care (n = 23)*
FIQ		
Total score (0–100)	1.74 (12.85)	−6.53 (15.03)*,†
Pain (0–10)	0.10 (2.02)	−0.48 (2.47)

Data presented as mean (SD).
* $p < 0.01$, ANCOVA, following adjustment for baseline, usual care *vs* homeopath care.
† $p < 0.05$, 1-sample *t*-test, intra-group comparison to zero, where zero equals no change.

had a 50% chance of being randomised to the usual care group affected their willingness to participate.

The low drop out rate (3/23) in the homeopath care group indicates that this intervention was acceptable to patients. Compliance with the intervention was good and 20/23 patients completed outcome measures at 22 weeks. The usual care group had a higher drop out rate (8/24), presumably because there was little incentive to turn up for the assessments for those not receiving the intervention. This high (33%) drop out rate demonstrated a weakness of this study design and future trials must consider ways to reduce drop out in the usual care group.

The usual care group did not report any statistically significant improvement in any of the outcome measures; however they did report a statistically significant deterioration in the McGill pain affective score despite continuing with the treatment prescribed by their rheumatologist. This deterioration may be due natural variation/progression of FMS, or to disappointment bias[23] (the effect on outcomes of a patient not receiving their hoped for treatment allocation). Future RCT design should consider the ethical and scientific impact of informing patients of the possibility of treatments that they subsequently do not receive.

Comparison with other studies

The homeopath care group reported statistically significant improvement in the primary outcome measure – FIQ total score, and a range of secondary outcome measures: FIQ number of days felt good, FIQ tiredness on waking, and FIQ fatigue, and the McGill pain VAS score.

The homeopath care group reported a 15.7% improvement in the primary outcome measure compared with the usual care group. Historically, 20% has been regarded as a clinically significant improvement in Rheumatoid Arthritis and FMS.[24] The 20% figure does not take into account the severity of the baseline scores of the patient group and the fact that healthier patients have a higher signal to noise ratio than less healthy patients.[1]

The EULAR guidelines[4] (published after this study was completed) make nine recommendations for the treatment FMS, based on expert opinion and evidence from RCTs. We further analysed our results in order to make comparisons to the RCT evidence for the EULAR guidelines. This evidence is reported in terms of effects size for pain (VAS scores), Function (FIQ total scores) and NNH (number needed to harm) with values of >0.2 = small, >0.5 = medium and >0.8 = large. Effect sizes with 95% confidence intervals were calculated using Cohen's *d*. This study reported a small pain effect size of 0.21 (CI −1.42 to 1.84) as measured by FIQ q15; but a large effect size of 0.81 on Function (95% CI −8.17 to 9.79). The function effect size from this RCT is similar to the range of effect sizes reported by the EULAR guidelines for pharmacological (0.19–0.61) and non-pharmacological (0.06–2.08) treatments for FMS. These findings however must be interpreted with caution as the 95% CI of both effect sizes spans zero (as is the case for almost all the effects sizes reported in the EULAR guidelines). The NNH could not be calculated as no adverse events were reported.

Implications for future studies

A recent study calculated that the annual disease related societal costs per patients were €7,813 for FMS patients[24]. When discussing homeopathy as a treatment modality, care must be taken to distinguish between homeopathic medicines and healthcare by a homeopath. From a cost effectiveness perspective, the main cost of the provision of 'homeopathy' is the homeopaths consultation time, with the cost of the homeopathic medicines being negligible (50 p a month).

Future study designs need to assess the effectiveness of the intervention on pain (VAS) and function (FIQ), and collect information needed to calculate societal and NHS costs. Future designs must address the issue of drop outs particularly in the usual care group. Given the acceptability of the treatment and the large function effect size of the intervention in this trial, there is a need for a definitive study to assess the clinical and cost effectiveness of adjunctive healthcare by a homeopath for patients with FMS.

Key messages

Adjunctive healthcare by a homeopath may improve overall function for those FMS sufferers without major co-morbidities.

Further studies are needed to assess clinical and cost effectiveness of adjunctive healthcare by a homeopath.

Ethical approval was given on 7.2.06 by Leeds (East) NHS Research Ethics Committee. REC reference number 06/Q1206/15. ISRCTN 74040048.

Conflict of interest

None.

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