An alternative multimodal approach is effective and safe for fibromyalgia

J. Freire de Carvalho[1], A. Lerner[2]

[1]Department of Medicine, Federal University of Bahia, Salvador, Brazil
[2]Department of Medicine, Chaim Sheba Medical Center, Tel-Hashoemr, Israel

ABSTRACT — OBJECTIVE: *Fibromyalgia (FM) is a prevalent disorder in general medicine. Several drugs and nutrients manage FM but with low efficacy and various side effects. Therefore, having an effective and alternative approach with no collateral effects is crucial for those patients.*

PATIENTS AND METHODS: *A retrospective study was performed. Demographic and clinical data, Visual Analogic Scale, and pre and post serum levels of 25OH vitamin D were analyzed. Statistical analysis was applied using JASP software. Significant results were those with* $p < 0.05$.

RESULTS: *13 FM patients (77% females) with a mean age of 44.5±17.6 years old were included. All patients used vitamin D; 38% took melatonin, a methylating agent in 62%, Rhodiola rosea in 62%, omega-3 in 62%, and 5-hydroxytryptamine in 85%. 85% of patients took an approach for dysbiosis. Interestingly, the proposed AMA induces a significant reduction of tender points count, VAS pain score, Pittsburgh sleep inventory, Beck anxiety inventory, Beck depression inventory, and the events of gastrointestinal complaints. Furthermore, the VAS well-being and vitamin D levels increased after the AMA approach. All patients felt improved in their FM conditions.*

CONCLUSIONS: *An AMA is effective and safe, without any side effects for fibromyalgia therapy. AMA reduces pain intensity, anxiety, and depressive symptoms and improves well-being and sleep with withdrawing classical antidepressants of the FM patients.*

KEYWORDS
Fibromyalgia, Nutraceuticals, Chronic pain, Vitamins, Supplements.

INTRODUCTION

Fibromyalgia (FM) is one of the most frequent and disabling conditions globally, and it is characterized by diffuse pain and central pain sensitization[1]. FM frequencies are 2% to 8% of the general population, commonly women[1]. The therapeutic approach for this disease consists of pharmacological and non-pharmacological approaches. The first one includes drug use that varies from analgesics, antidepressants, and muscle relaxation agents[1]. These drugs have various side effects: insomnia, sedation, drowsiness, fatigue, weakness, and fatigue[2]. However, there are attempts at combined therapy use to reduce adverse events. They are more minor but still present using conventional medicine[1]. Based on these adverse events, new and valuable therapeutical options are desired for FM therapy. In this line, alternative and complementary medicine are highly desirable to treat FM. Alternative and complementary medicine comprises physical exercise, mindfulness, nutraceutical, vitamin supplementation, and dietary manipulations. However, a holistic, multimodal approach has rarely been used in studies with FM patients. Therefore, the present study evaluated the efficacy and safety of an alternative medical approach (AMA) in patients with fibromyalgia.

Corresponding Author
Jozélio Freire de Carvalho, MD; e-mail: jotafc@gmail.com

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PATIENTS AND METHODS

The present retrospective study included 13 patients over 18 years old diagnosed with FM according to the American College of Rheumatology criteria[3] and was followed up in our private clinic. The follow-up period varied from 1 to 3 years. Demographic data, medical chart review, comorbidities, medications used, pain intensity, and the number of tender points were recorded. Exclusion criteria were the presence of conditions that may simulate FM, such as hypothyroidism, hyperparathyroidism, myositis, and cancer. In addition, all patients had previous routine laboratory analyses, and these data were available in their medical charts. The Visual Analogic Scale (VAS) for pain evaluation is a 100–mm line on which patients indicate the degree of pain perceived at that moment. Patients gave a verbal gradation of pain by choosing a number between 0 to 10, with higher numbers corresponding to higher pain levels. The same scale was used to detect well-being levels. Pittsburgh sleep inventory (PSI), Beck anxiety inventory (BAI), Beck depression inventory (BDI), and the number of complaints of dysbiosis inventory were used for all participants. Vitamin D was prescribed to all participants, independent of the serum levels. Concerning melatonin, this hormone was offered to those subjects with insomnia or any sleep disorder. Methylating agents were added if the patient had low levels of folic acid and/or vitamin B12. *Rhodiola rosea* was added to the patients with moderate/severe fatigue and/or low cortisol. A gluten-milk-sugar-free diet was suggested for patients with overweight or obesity and those with a milk/gluten intolerance history. In addition, 5-hydroxytryptamine (5-HTP) was offered to patients with any degree of anxiety. In this pilot study, no change or suggested physical exercises were suggested. Dysbiosis was treated in patients with gastrointestinal abnormality using albendazole 400 mg twice, vitamin A 25,000IU/day, and quercetin 250 mg for two months. During the study, patients did not initiate new drugs. Nevertheless, tapering and excluding any conventional drugs were permitted if the patients felt better about the FM.

Statistical Analysis

Statistical analyses were performed using the JASP software version 0.12.2. Parametric and non-parametric tests were used to compare the groups. $p<0.05$ was considered significant. Results are presented as mean ± standard deviation, median (range), or percentage.

RESULTS

Thirteen patients with FM were included in this study. The mean was 44.5 ± 17.6 years, with 77% female and 62% Caucasians. The disease duration was 2 (1-16) years. Comorbidities were observed in all patients, including anxiety in 46%, depression in 15%, systemic hypertension in 15%, and hypothyroidism in 15%. Concerning drugs, 38% used antidepressants such as escitalopram (n=1), fluoxetine (n=1), sertraline (n=1), paroxetine (n=1), and duloxetine (n=1). 80% of patients stopped the antidepressant during this study.

All patients used vitamin D in a dose ranging from 5,000IU-30,000IU/day, and one patient received 600,000IU intramuscularly; 38% of patients took melatonin (3-5mg/day). A methylating agent was used in 62% (including pyridoxine, methylcobalamin, or methylfolate). *R. rosea* was prescribed in 62% of patients with low cortisol levels. The approach for dysbiosis was offered to 85% of the patients. Omega-3 (2-4 g/day) was prescribed to 62%, and 5-hydroxytryptamine (100-200 mg/day) was used in 85% of the FM patients. Features' changes of FM patients at baseline and after AMA are summarized in Table I. Interestingly, after AMA, there was a weight loss, even in patients where a diet was not suggested, although no significant differences were detected. A significant reduction before and after AMA of tender points count AVS pain score, PSI, BAI, BDI, and the number of complaints of dysbiosis inventory. A marked increase in AVS well-being and vitamin D levels were detected (Table I). All patients improved their FM condition after the AMA approach; 2 patients felt 100% better; 3, 90%; 5, 80%, and three patients felt 70% better.

DISCUSSION

This study demonstrated that an AMA methodology effectively treats FM patients without noticeable side effects. The study's advantages were that only FM patients who fulfilled the international criteria for this condition were included[3], and the same researcher did all data collection and analysis. Previous studies showed hypovitaminosis D in FM patients. A recent meta-analysis with 851 cases and 862 controls revealed lower vitamin D levels in the cases[4]. Our group previously supplemented vitamin D in FM patients and demonstrated an improvement in VAS scores after 3 months, and 72.2% experienced a significant improvement in symptoms[5]. A recent meta-analysis with 98 FM patients showed a positive effect of melatonin on the FM symptoms[6]. We also verified a positive effect on our patients. Regarding vitamin B12, our previous study showed that vitamin B12 was not reduced in FM[5]. Although in the article from Regland et al[7] the authors evaluated 12 patients with FM and chronic fatigue syndrome, homocysteine was increased in CSF. Interestingly, levels of vitamin B12 correlated significantly with fatigue and

Table I. Outcomes comparison between fibromyalgia patients pre and post-treatment.

	Fibromyalgia Pre-AMA N=16	Fibromyalgia Post-AMA N=16	*p*-value
Weight, Kg	79.7 ± 23	73.8 ± 17.5	0.262
Systolic blood pressure, mmHg	127 ± 7.9	116 ± 11	0.069
Diastolic blood pressure, mmHg	75.5 ± 12.1	72 ± 11.3	0.195
Tender points count	17.1 ± 1.7	6.1 ± 5.1	<0.001
Beck anxiety inventory	21.7 ± 13.2	9.6 ± 8.8	0.02
Beck depression inventory	18.0 ± 5.8	9.5 ± 6.3	<0.001
Pittsburgh sleep inventory	12 (7-25)	6 (4-15)	0.005
Dysbiosis, number of complaints	12.2 ± 5.8	9.0 ± 6.2	<0.001
AVS pain score	6.0 ± 1.5	1.5	<0.001
AVS well-being	5.8 ± 1.4	8.5 ± 0.9	<0.001
Vitamin D, ng/mL	26.5 ± 5.5	50.7 ± 0.8	0.023

AMA: alternative medical approach; AVS: analogic visual scale.

items of a psychopathological rate scale[7]. Some studies evaluated serotonin levels in FM patients and observed reduced serum levels of this neurotransmitter[8]. In addition, an open clinical trial demonstrated the effectivity of 5-HTP, a serotonin precursor, in FM during 90 days of supplementation[9]. Although only two patients were on a gluten-milk-sugar-free diet, all participants lost weight. One explanation could be excluding drugs that enhance appetite (e.g., antidepressants). A prospective trial with 75 FM patients compared a gluten-free diet with a hypocaloric diet. In the end, both groups of patients improved[10]. It confirmed an excellent response to this dietetic approach in FM patients. Omega-3 was used in patients with FM in a small case series. The authors found a clinically significant pain reduction and improved function in a follow-up of 19 months with no adverse events[11]. The current study's limitations are that it included a relatively small number of patients, and the control group is lacking. However, this is a preliminary pilot retrospective study. Futures well designed, prospective and controlled, with many more participants using AMA in FM, might reaffirm its safety and efficacy.

CONCLUSIONS

This study demonstrated that a multimodal approach improves FM patients' symptoms and reduces anxiety, depression, sleep disorders, and dysbiosis. More so, in polypharmacy intake, the AMA approach seems to reduce adverse drug effects and improve patients' quality of life.

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The authors declare that they have no competing interests.

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