Case Report

Interdisciplinary assessment-oriented treatment of fibromyalgia: a case report

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Article history:
Received 10 October 2017
Revised 25 January 2018
Accepted 8 February 2018

Keywords:
Fibromyalgia
Chronic pain
Integrative medicine
OPS 8-983
Patient reported outcome
Complementary medicine

ABSTRACT

Patients with fibromyalgia (FM) have often tried many outpatient treatments, and breakthrough pain frequently stops them from performing everyday tasks and participating in society. FM-pain that has become chronic, therefore, affects quality of life. This case study describes the administration of interdisciplinary inpatient pain therapy due to a primary diagnosis of fibromyalgia with integrated complementary medicine. The female patient, who had several concomitant disorders and had been suffering from pain for many years, benefited from the holistic treatment approach in terms of a reduction in pain and an improvement in physical functions and mental health. The ability to have a positive effect on pain symptoms in the longer term is essential. Compliance with the treatments used should also be improved, so that a healthier lifestyle and better pain management can continue after discharge from hospital. These results are supported by other study results and should provide the impetus for major studies to evaluate holistic pain therapies in FM.

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1. Introduction

The case study concerns a patient who received interdisciplinary treatment for acute exacerbation of chronic fibromyalgia (FM) pain syndrome. FM tends to have a severe impact on health-related quality of life, working activities and social life. Patients with FM, in whom pain has stopped functioning as an indicator and warning system and become a disease in itself, are usually very limited in their ability to perform many everyday tasks. If there is an acute exacerbation of the FM pain in various parts of the body, the physical impairment makes outpatient treatment methods more difficult and the unimodal approach often becomes ineffective. In many patients, the pain is rooted in other disorders and often associated with depression, gastrointestinal complaints,
headache, migraine and sleep disorders. In patients with FM, the process by which pain becomes chronic is often accompanied by problems. It is common for patients with FM to have several pain-associated musculoskeletal disorders and other chronic disorders involving pain. In many cases, a range of interacting drugs are administered, and the problem of polypharmacy can develop. The correct choice of pain management for patients is influenced by communication and agreement between treating doctors and therapists. However, in patients with FM, it is common for pain to be underestimated and inadequately treated. These patients have tried many different treatments, which are often based on different diagnoses but not as successful as hoped. Inadequate pain therapy can then lead to a clear decrease in quality of life and even immobility. The physical and mental impairment caused by the pain puts patients at risk of losing their social networks.

An interdisciplinary approach to FM pain syndrome is not yet standard practice in health systems, as it is costly in terms of personnel, who are not yet appropriately reimbursed.

2. Interdisciplinary inpatient treatment (OPS 8-983)

The Operations and Procedures Catalogue (OPS) is an adaptation of the International Classification of Procedures in Medicine (ICPM) published by the World Health Organisation. In the case study, OPS 8-983 was used. This procedure allows patients to be treated by a variety of disciplines: physiotherapy, ergotherapy, pain therapy, cognitive behaviour therapy, and conversational psychotherapy in different patient-related combinations and with a therapy density of at least 11 hours per week. The team is led by a specialist in rheumatology.

If a patient with FM has several musculoskeletal and general medical disorders at the same time, the situation becomes more challenging for those involved in the inpatient treatment process. The approach described in the case study should not only be confined to the primary disorder, but also treat concomitant diseases efficiently. The case study describes the integration of complementary medicine into a holistic treatment concept, that is, conventional medicine supplemented with complementary medicine, and assesses the results.

3. Case report

The 64-year-old female patient was born and educated in Germany and she lives with her husband. She had been reporting pain in various parts of her body for six years. On admission, she complained of significantly increased pain in her muscles and all over her body, particularly in her cervical spine and the nape of her neck with radiation into both shoulder blades and arms. Her neck muscles were tense and tender. The patient also reported an increase in lumbar/sacral pain with radiation into the sacroiliac joint, particularly on the left, and then the left leg as far as the knee. She had pain in all major joints, particularly both elbows, shoulders and knees. The patient described the pain as dragging, pressing and sometimes stabbing and pulsating during acute episodes. The knee pain was described as nagging.

She said that the pain was exacerbated by the cold and cold, damp weather as well as physical and mental stress but alleviated by heat and the application of heat. However, the excessive heat of the previous days had made her feel much worse. She was clearly exhausted and under considerable strain. Her mood was said to be depressive, and she felt weak and unmotivated. She reported problems falling and staying asleep because of the pain. She felt listless and tired, unsettled and unstable. She reported morning stiffness lasting 1.5 hours and difficulty getting going. After waking up in the mornings, it took great effort to move from a lying to a sitting and then standing position and start moving.

Symptoms typical of fibromyalgia reported by the patient included daytime tiredness, profuse sweating, sometimes shortness of breath, anxiety, severe irritability and constant rumination.

The results of the general physical examination on admission were summarised as follows:

- Heart: regular heart action. BP 140/80 mmHg on the right, 130/80 mmHg on the left. HR 70/minute.
- Abdomen: soft abdominal wall, obese. No palpable enlargement of the liver or spleen. No costovertebral angle tenderness on either side. No enlarged lymph nodes, resistance or tenderness. Active bowel sounds over all four quadrants.
- Spine: no pain on percussion. Tenderness over the cervical, thoracic and lumbar spine. No blocks. Clear muscle tension in the shoulder girdle and nape of the neck. Limited rotation of the cervical spine and reclination at the end of the range of motion. Moderate tenderness at L5 on the left. Bilateral myalgia in the cervical and lumbar spine.

As a result of the medical examination, the following diagnoses were made: fibromyalgia syndrome (International Statistical Classification of Diseases and Related Health Problems [ICD] M79.70), disc disc prolapse L3/L4 (ICD M54.16), lumbar and other disc discomfort with radiculopathy (ICD M51.1), compression of nerve roots and nerve plexus in disc injuries (ICD G55.1), polyneuropathy (ICD G62.9), and gonarthrosis (ICD M15.9). Further diagnoses were a recurrent depressive disorder, presently moderate episode (F33.1), an intertriginous eczema (ICD L30.4), essential hypertension (ICD I10.90), obesity due to excessive calorie intake: body mass index (BMI) of 38 (ICD E66.01) and vitamin D deficiency (ICD E55.9).

4. Evidenced-based assessment according to OPS 8-983 and quality measurement

In addition to the case history, a standardised admission assessment was conducted for quality assurance and risk management purposes. For a complete record of the course of the patient’s pain, assessment parameters from as far back as 2011 were analysed.

The Mainz Pain Staging System (MPSS) was used to assess the chronicity of the pain. It covers four areas: temporal and spatial aspects of the pain and the patient’s use of medication and the healthcare system. The patient was classified as stage 3 (Table 1). The Pain Disability Index (PDI) was used to record
impairment and a subjective assessment of the degree of pain-related impairment in everyday tasks and activities of daily living.10

At the time of admission to hospital, the patient scored 42.9 of a maximum 70 points on the PDI. Over the years, her PDI score had fluctuated between 50 and 60 points (Table 2).

Pain-related sleep disorders were measured using a visual analogue scale from 0 to 10,11 with a score of 0 meaning no disruption and 10 meaning the maximum sleep disruption thought to have been caused by the pain. Between 2011 and 2015, the score for pain-related sleep disorders fluctuated between 5 and 6 (Table 2). On admission, the patient scored 6.5 out of 10. The patient’s capacity for physical function was measured using the Hannover Functional Ability Questionnaire (FFbH). The FFbH consists of 18 questions about everyday activities.

According to Kohlmann and Raspe (1996), the following levels of impairment can be obtained by comparing average scores: “normal functional capacity” 100–80%, “moderate functional capacity” 70%, “significant functional capacity” <60%.12 According to the FFbH, the patient had significantly impaired functional capacity for everyday activities, at 44%, when admitted for interdisciplinary treatment. In the past, her score had fluctuated between 40% and 60% (Table 2). Continuous measurement and documentation of pain is an important component of the pain assessment.13 A visual analogue scale (VAS) was used to measure the pain 17, with a score of 0 meaning no pain and a maximum of 10 meaning pain that was no longer bearable.14 The patient had previously (2013) given her pain an average intensity score of up to 9 out of 10. In 2014 and at the beginning of 2015, it was lower but still higher than 6 points (Table 2). On admission, the average intensity of the pain was reported to be 5.8 out of 10 on the VAS. In previous years, the highest pain scores had been between 8 and over 9 on the VAS (Table 2).

On admission to hospital, the patient gave breakthrough pain a VAS score of 7.5 out of 10. A VAS score of 3 out of 10 was reported for the tolerable pain limit. In the past, this had fluctuated between 1.6 and 4.6 out of 10 on the VAS (Table 2). The Patient Health Questionnaire Depression (PHQ-D) was used as a screening tool for depression.15 The patient scored 14 points on PHQ-D and was therefore suspected to have a moderate depressive disorder (1–4 minimal depressive symptoms, 5–9 mild depressive symptoms, 10–14 moderate depressive symptoms, 15–27 severe depressive symptoms). In the past, her score had fluctuated between 13 and 21 points (Table 2). A VAS was used to measure impairment of well-being and physical impairment. The course of these impairments can be seen in Table 2. On admission, the VAS score was 5.8 out of 10 for impairment of well-being and 6.4 out of 10 for physical impairment (Table 2).

| Table 1 – Reported Case: Stage Model of Pain-Chronification (MPSS) According to Gerbershagen |
|-----------------------------------------------|
| Temporal aspects (pain course) | Long-lasting, almost continuous pain, with rare strength change |
| Grade 2: | |
| Spatial aspects (pain localisation) | Pain spread to remote areas; Often change of pain. Monolocular pain over 70% of body surface; Multilocular image with 3 or more separate pain representations with the same pain quality and nearly equal pain intensity |
| Grade 3: | |
| Drug administration behaviour | 1–2 drug abuse episodes 1–2 drug withdrawal treatments currently inappropriate medication |
| Grade 2: | |
| Patient care degree 2: | 2–3 times change of the personal physician, aimless consultation of specialists, in particular the same disciplines 2–3 pain-related hospital stays 1–2 stays in rehabilitation or pain centres 2–3 pain-related surgical procedures |

| Table 2 – Evidence-based Assessment Results After Taking the Interdisciplinary Treatment |
|-----------------------------------------------|
| 02/11 | 08/12 | 02/13 | 01/14 | 01/15 | End of hospital stay | 18 months later |
| Impairment of well-being | 7.3 | 7.9 | 5.7 | 7.9 | 6.2 | 3 | Not reported |
| Impairment of the body | 6 | | | | | 3 | Not reported |
| Impaired sleep | 5.1 | 6 | 5.8 | 6.1 | 6 | 2.9 | 5.6 |
| Pain threshold | 3.8 | 4.6 | 1.6 | 3.2 | 3 | 5.4 | 3.3 |
| VAS average | 8.1 | 5 | 8.8 | 6.3 | 6.5 | 5.4 | 5.2 |
| VAS max | 9 | 8.1 | 9.3 | 8.4 | 8 | 7.7 | 5.6 |
| PDI | 59.4 | 52.4 | 56 | 59.7 | 56.4 | 19.3 | 22 |
| FFbH (%) | 52 | 58 | 38 | 44 | 41 | 86 | 69 |
| PHQ-D | 13 | 16 | 21 | 11 | 21 | 6 | 9 |

5. Treatment and progress

The interdisciplinary treatment provided in accordance with OPS 8-983 included and integrated aspects of physical therapy and physiotherapy,16 exercise,17 cognitive behavioural therapy,18 person-centred psychotherapy,19 complementary medicine, including acupuncture,20 detoxifying procedures,21 holistic massage22 and nutrition therapy.23

Overall, the inpatient stay was marked by a high treatment density, which was also recorded in treatment minutes (TM) per day (Fig. 1).

Physiotherapy/physical therapy consisted of hydrotherapy/thermotherapy for stimulation of metabolism and the immune system, and muscle relaxation. The patient also received exercise therapy for strength training and endurance, an increase in energy levels and an improvement in cognition/coordination and cardiopulmonary conditioning. Relaxation exercises, such as autogenic training, were performed to stabilise the autonomic nervous system. Other physiotherapeutic and physical measures included lymphatic
drainage in the legs to reduce pain, stimulate blood flow and relieve painful joints and muscle groups.

Pain psychotherapy consisted of identifying existing resources, developing new strategies for dealing with pain (shifting attention, building up activity levels) and providing information about the development of pain and factors that promote pain.

The patient also took part in a pain management group, in which she worked on modifying and recording factors that trigger and maintain pain. She was taught specific relaxation techniques and mental methods of managing pain and distancing herself from it. Cognitive behavioural therapy focused on dealing with the disorder and everyday management strategies.

With laboratory tests showing a vitamin D deficiency, conventional medication consisting of replacement therapy with Dekristol was initiated. The medication that the patient was taking on admission was continued. Tramal was discontinued at the end of her stay.

In the first week of her inpatient stay, the patient reported inconsistent pain accompanied by episodes of severe pain. After that, there was an increasingly clear improvement in pain symptoms and sleep quality. She reported feeling that she was responding well to the medication and treatment. She said she felt much better and was tolerating the applications very well. Before discharge, she was very satisfied with her progress and the fact that the intensity of the pain had fallen to 3/10 on the VAS scale. The average intensity of the pain had also fallen to 5.4 out of 10 before discharge. Based on the Checklist of Self-Reported Symptoms by von Zersen, a subjective assessment of the impairment caused by her physical and general symptoms was within the normal range (15 points) before discharge and had therefore improved by 15 points since admission. According to the FFbH, the patient had normal functional capacity for everyday activities before discharge, with a score of 86 per cent. Functional capacity had therefore improved by 42 per cent since admission.

The assessment results after taking the interdisciplinary treatment approach are summarised in Table 2 and the follow-up took place after 18 months. The average intensity of the patient’s pain was found to be stable and the intensity of the breakthrough pain was lower. There had also been no significant deterioration in her mental state. The PDI scores remained almost constant, but there was a slight deterioration in physical functions.

6. Holistic pain treatment principles

A comprehensive pain assessment addresses the pain’s nature, cause and personal context. All the members of the multidisciplinary team work together, either physically, psychologically or spiritually. If conventional medication is ineffective or associated with side effects, it may be replaced or supplemented with naturopathic remedies that have few side effects. However, it is important for qualified specialists, nurses and therapists with many years of experience in Complementary Medicine to monitor the treatment closely.

7. Conclusion

Pain therapy in patients with FM and complex pain presents health systems with huge challenges and has potential for improvement. Common barriers faced by treatment providers include insufficient pain management training, a fear of the side effects of medication and a lack of time. Misunderstood by physicians and cost are barriers because health systems have limited funds.24

As the treatment results in the case study show, an interdisciplinary approach to pain can have a positive impact on pain management and the outcome of treatment.25

In patients with FM and pain, a detailed history of the pain, in which pain is recorded in a standardised and differentiated way, should be taken before treatment starts.26 An
assessment that records all aspects of the pain and the way it triggers impairment should also be performed. For a holistic approach to the pain, a detailed assessment of the pain is conducted, as indicated in the case study. This enables the various disciplines in the treatment team to formulate treatment aims based on validated assessment results from the start of treatment. These treatment aims should be reviewed and evaluated in interdisciplinary team meetings. Deviations from the assessment parameters measured at the start of the inpatient stay may also be used to make changes to the treatment.

It is also important to ensure that conventional medicine is only supplemented with evidence-based CM procedures. Acupuncture was included in the interdisciplinary treatment to reduce pain.

Cupping was performed for detoxification. This can have a positive effect on quality of life as well as reduce pain.

The patient also received nutrition therapy as a component of the holistic concept. This resulted in weight loss. The concomitant integration of complementary medicine was accepted and rated positively by the patient. She reported “active involvement in the treatment”. This could be attributable to the patient-centred approach associated with integrative treatment and close doctor/nurse/therapist–patient relationship. As also shown in other studies, an improvement in quality of life was achieved.

All members of the interdisciplinary team should take a patient-centred approach in patients, as this increases patient adherence to treatment and can trigger lifestyle changes. Integrating CM procedures into conventional medicine could lead to person-centred healthcare in the form of integrative medicine.

The evidence supports interdisciplinary treatment, but further studies of its benefit over unimodal treatment should be initiated. Further studies should also investigate the benefit of integrating CM into allopathic medicine and the effect of this on quality of life and patient satisfaction.

Funding
None.

Conflict of interest
The authors declare no conflict of interest.

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