Review paper

Fibromyalgia

Fibromialgia

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Abstract

Fibromyalgia is classified as a disease of the connective tissue. There are many hypotheses about the causes of fibromyalgia, but none of them is finally confirmed. Due to unexplained etiopathogenesis of the illness, its treatment is difficult. People with fibromyalgia who suffer from generalised pains and chronic fatigue give up sport and increased physical activity in fear of escalation of ailments, limiting themselves to pharmacological therapy or psychotherapy. Meanwhile, properly selected kinesitherapeutic training can significantly improve the quality of life of people with fibromyalgia. The article discusses the current diagnostic criteria, clinical picture of the disease, and methods of treatment, with particular emphasis on therapeutic exercises.

Streszczenie

Fibromialgia zaliczana jest do chorób tkanki łącznej. Istnieje wiele hipotez na temat jej przyczyn, jednak żadna z nich nie jest ostatecznie potwierdzona. W związku z nieznaną etiopatogenezą choroby i brakiem miarodajnych badań laboratoryjnych leczenie fibromialgii jest utrudnione. Osoby z tym schorzeniem, u których występują uogólnione bóle oraz przewlekłe zmęczenie, w obawie przed nasileniem się dolegliwości rezygnują ze sportu i wzmożonej aktywności fizycznej i ograniczają się do leczenia farmakologicznego lub psychoterapii. Tymczasem odpowiednio dobrany trening kinezyterapeutyczny może znacząco podnieść jakość życia osób chorych na fibromialgię. W artykule omówiono aktualne kryteria diagnostyczne, obraz kliniczny choroby oraz sposoby leczenia, ze szczególnym uwzględnieniem ćwiczeń leczniczych.

Introduction

Fibromyalgia (FM) belongs to systemic diseases of the connective tissue, i.e. a group of soft tissue rheumatism. This concept was introduced into clinical medicine in response to the need to name, describe, and classify lengthy, persistent, and diffuse pains that are not caused by specific changes in the locomotor system [1, 2].

According to current data, it is assumed that the prevalence of FM in the general population is 2–4%, with women suffer from it up to nine times more often than men. In Poland, FM was diagnosed in about 1.2–2.4 million people. It affects mostly people between 30 and 50 years of age [2, 3].

Hypotheses and clinical picture

There are many hypotheses about the causes of FM, but none of them has been confirmed. It is believed that a sleep disorder or disorder of metabolism of serotonin may be important in the aetiology. Nevertheless, research is ongoing to continue to explore the relationship between the presence of serotonin and symptoms of FM, with the simulation of the synaptic system [4–6]. Stress often plays an important role in inducing symptoms. One of the current ideas about the causes of the disease is the phenomenon of central sensitisation, according to which the pain in FM patients corresponds to an excessive response to painful stimuli. It was observed that the patients experienced abnormal accumulation of pain, which could be the cause of intensification and prolonged recovery from nociceptive stimulus [7]. The causes of FM can be sought in the individual's susceptibility to inflammatory changes in the joints under the influence of extrinsic factors or somatisation of long-term emotional states (especially negative ones) [8]. Closest to the truth, in the case of FM is multifactorial aetiology, whereby the overlapping of many exogenous and endogenous factors induces symptoms of the disease [9].

The clinical picture of FM distinguishes three main groups of symptoms [8]:

1. Axial symptoms, occurring in all patients. These are generalised pains and the presence of tender points.
2. Typical symptoms, occurring in most patients. These include: chronic fatigue, sleep disturbances, muscle rigidity, and the intensification of pain after exercise.
3. Associated symptoms, occurring in approximately 25% of patients. These are symptoms in the scope of the psyche of the patient: anxiety, depression, headaches, dry mucous membranes, menstrual and potency disorders, vegetative symptoms, Raynaud"s syndrome.

The main symptom reported by the patients is pain. It is usually of the following character:
– *Diffuse, manifold*. According to American College of Rheumatology (ACR), the pain is generalised pain when it occurs on the left and right side of the body, below and above the waist, and also occurs in the area of the spine or chest [2, 10].
– *Persistent*, it often lasts for several years.
– *Of dynamically variable nature and location*. Sometimes increases, another time decreases, it appears in anatomically distant parts of the body, and changes position [11].
– *Of high intensity*. Often referred to by patients as "scary", "unbearable", "popping", etc. It is the cause of considerable suffering in patients.
– *Different in its character*. Described by patients comprehensively as stinging, burning, crease, dull deep, stabbing, biting, throbbing, and piercing.
– *Responsive to changes in weather, temperature, and stress conditions*.
– Not responding to treatment with analgesics or nonsteroidal anti-inflammatory drugs.

Diagnostics

In 1990 the ACR published criteria for diagnosis of FM. To determine the occurrence of FM a patient had to experience generalised pain, lasting more than 3 months, occurring on the left and right side of the body, above and below the diaphragm, and in the axis of the body. In addition, painful compression should occur in 11 out of 18 specific trigger points [7, 9].

In 2010, the ACR announced new diagnostic criteria for fibromyalgia. For their needs an index of pain was developed (WPI) and a scale of symptoms (SS), which replaced the test of trigger points. To be able to diagnose FM, pain must be present for at least 3 months, there must be no other reason detected in the patient that could cause the pain, the patient must point out at least seven painful areas of the body among those listed in the index of pain and must receive at least five points on the SS scale, or must out between three and six painful areas and have a score greater than nine on the SS scale [12].

Widespread pain index

The patient determines where within the last week he/she had pain; the index covers 19 areas of the body: left shoulder girdle, right shoulder girdle, left shoulder, right shoulder, left forearm, right forearm, left lower leg, left hip, right hip, left thigh, right thigh, right lower leg, jaw on the left, jaw on the right, abdomen, chest, cervical spine, thoracic spine, lumbar spine.

Symptom severity

The test determines the severity of the problems for any of the following symptoms: fatigue, sleep disorders, and cognitive disorders:
– No problems – 0 pt.
– Light problems, generally mild and temporary – 1 pt.
– Moderate, considerable problems, often occurring and/or at a moderate level – 2 pt.
– Heavy: ubiquitous, continuous problems that disturb life – 3 pt.

Extra points may be awarded in the case of additional ailments such as the following: muscle pain, irritable bowel syndrome, muscle weakness, insomnia, depression, constipation, nausea, nervousness, chest pain, blurred vision, fever, diarrhoea, dry mouth, loss of appetite, hair loss, frequent urination, painful urination, etc.
– No additional complaints – 0 pt.
– Few complaints – 1 pt.
– Moderate number of additional complaints – 2 pt.
– A large number of additional complaints – 3 pt.

Before diagnosis, other soft tissue rheumatism running with similar symptoms should be excluded. This could be, for example [13]: colagenosis, rheumatic inflammation of muscles, early stages of rheumatoid arthritis, extensive inflammation of the spine, enthesopathies, tendinitis and bursitis, manifold skeletal muscle overload, metabolic disorders, systemic lupus erythematosus.

Treatment

Curative treatment of FM is difficult because of unexplained etiopathogenesis of the disease and no reliable laboratory tests. The current knowledge about FM allows the creation of a plan for improvement based on four therapeutic methods [2]: patient education, pharmacological treatment of proven effectiveness, properly planned physiotherapy, consisting mainly of kinesitherapy, as well as physiotherapy and massage, psychotherapy based on cognitive and behavioural methods [14].

Kinesitherapy

People with FM who suffer from generalised pains and chronic fatigue in fear of escalation of ailments often give up sport and increased physical activity. Mean-

while, properly selected kinesitherapeutic training supports the cardiovascular system, significantly enhances efficiency, reduces pain symptoms, allows for greater physical and mental effort, reduces muscle tension, and strengthens the muscles [15]. Regular kinesitherapy also affects nutrition and bone mineralisation, increasing their strength, and it allows patients to maintain full range of motion. Systematic exercise leads to increase in motor units, which improves neuromuscular coordination (weakened in patients with FM) [16]. Patients whose process of drug therapy or psychotherapy is supported by physical exercise achieve far better results.

In planning kinesitherapy one should pay attention not to overload the body with too much and too long duration effort. The main purpose of the exercises is restoration of proper maintenance of daily activities that, as a result of the disease, have been temporarily or permanently lost. In the case of FM these functions include normal range of motion in the joints and muscle strength. Patients must be protected from inactivity and immobility.

In the kinesitherapy of patients with FM, among others, the following types of exercises and methods can be used: 1) generally improving exercises: a) general keep-fit exercises, b) morning exercises, c) exercises in water; 2) relaxation exercises: a) autogenic Schulz training, b) Jacobson training, c) yoga; 3) kinesitherapeutic methods: a) pilates method, b) upledger method, c) S-E-T method.

Summary

Difficulties in the treatment of FM due to inadequate knowledge of the disease mean that pharmacotherapy or psychotherapy do not bring the expected results. In the literature, many authors provide evidence of a positive impact of kinesitherapy on the quality of life of patients with FM [17, 18]. There is no consensus as to which of the methods or exercises are most effective, and therefore research is still carried out on their effectiveness [19]. In all publications, however, it is noted that the most important thing is regularity of exercise. Wilson *et al*. note that approximately 47% of their patients with FM included wide-ranging kinesitherapy in their standard treatment [20]. Taking into account the benefits that come from the enhancement of the therapy with appropriately selected exercises, it seems that this percentage should be much higher. Therefore, physicians and physiotherapists should educate patients and assist them in the selection of an appropriate training plan adjusted to the individual capabilities and interests of patients.

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