

FIBROMYALGIA

MARCEL PEREANU¹

¹“Lucian Blaga” University of Sibiu

Keywords:
fibromyalgia,
fibromyalgia syndrome,
chronic pain

Abstract: *Fibromyalgia is a chronic disorder characterized by central pain syndrome, fatigue and tenderness to touch. The exact cause of fibromyalgia is unknown, but is thought to be related to abnormal levels in certain neuromediators in the brain and changes in the way the central nervous system (brain, spinal cord) processes the pain messages. Fibromyalgia is the most common cause of chronic, widespread pain. Taking medication, together with other measures (cognitive behavioural therapy, lifestyle changes) can help relieving it.*

Cuvinte cheie:
fibromialgia, sindromul
de fibromialgie, durere
cronică

Rezumat: *Fibromialgia constituie o afecțiune cronică caracterizată printr-un sindrom dureros central, fatigabilitate și sensibilitate la atingere. Cauza exactă a fibromialgiei este necunoscută, dar se consideră a fi legată de nivele anormale ale unor neuromediatori la nivelul creierului și modificărilor asupra modului în care sunt procesate mesajele dureroase la nivelul sistemului nervos central (creier, măduva spinării). Fibromialgia constituie cea mai frecventă cauză de durere cronică, generalizată. Aceasta poate fi ameliorată prin administrarea de medicamente, alături de alte măsuri (terapie cognitivă comportamentală, modificări în stilul de viață).*

Known under the name of fibromyalgic syndrome or fibrositis, it is a chronic condition that causes widespread pain in the body accompanied by fatigue, drowsiness, impaired memory and mood. The name comes from the Latin word for fibrous tissue (fibro) and the Greek ones naming muscle (myo) and pain (algos).

Etiology

Fibromyalgia is a disorder of the central nervous system caused by neurobiological abnormalities that cause physiological pain and cognitive impairment. The exact cause of this condition is unknown and involves many psychological, genetic, neurobiological and environmental factors. In most cases, the symptoms of the disease are increasing in time without being able to define an event that triggers the disease. In other cases, the symptoms appear after a physical or mental trauma, surgery, car accident, birth, infection (usually, a persistent state of stress). It is becoming increasingly evident that the interaction of the environmental factors, along with the action of certain genes increases the risk of developing fibromyalgia (the same genes associated with the somatic functional syndromes and with the depressive disorders).(1)

Epidemiology

Fibromyalgia affects 2-8% of the population, being 7 times more common in women than in men. Most often, it occurs in adults between 30 and 50 years old, but it can occur at any age including the children and the elderly. The reasons that make it difficult setting the diagnosis for this condition is the fact that the symptoms described by the patient are sometimes quite vague and ambiguous, there is no specific test to diagnose the disease and no detectable signs of inflammation. Most often, the people affected are considered erroneously as neurotic.(2)

Physiopathology

It is believed that the disease is caused by a general decrease in the pain threshold. The painful sensations are

amplified by the pathways through which the central nervous system (the brain and the spinal cord) processes the pain signals. The pain felt is more intense than in the normal people because it is exaggerated by the anomalies in the CNS and in the pain processing pathways. Therefore, the events that normally do not cause any pain (e.g. skin touching) are felt by the patient with fibromyalgia as painful. Other researchers have discovered that the level of substance P (which transmits the pain impulses to the brain) in the CSF of the patients with fibromyalgia is 3 times higher than in the general population and because of that, those affected feel more intense the painful sensations.(3,4,1)

Genetic transmission

Genetic transmission is suggested by the high rate of aggregation of fibromyalgia in some families. Hereditary transmission manner is currently unknown but it is suspected being of polygenic type. Researchers have shown that fibromyalgia is associated with polymorphisms in genes in the serotonin, dopaminergic and catecholaminergic systems. This polymorphism is not specific to the disease and is associated with numerous similar disorders (chronic fatigue syndrome, irritable bowel syndrome) and depression.

Clinical picture

The symptoms vary in intensity throughout the day, being more pronounced in the evening. The complaints described by patients may worsen with fatigue, mental tension, sleep, weather changes, hormonal fluctuations (menstruation, menopause), stress, depression and other emotional factors. In approximately 25% of patients, the symptoms can be so intense that interfere with the person's work capacity.

Fibromyalgia has many symptoms whose intensity varies from patient to patient. The main symptoms described are:

- generalized pain that can be felt in the entire body or may be localized, most commonly in the back and neck. The

¹Corresponding author: Marcel Poreanu, Str. Pompeiu Onofrei, Nr. 2-4, Sibiu, România, E-mail: marcelporeanu@yahoo.com, Tel: +40269 215050
Article received on 12.09.2014 and accepted for publication on 28.10.2014
ACTA MEDICA TRANSILVANICA December 2014;2(4):191-192

CLINICAL ASPECTS

pain is usually continuous and its severity varies during different times of the day. It is described as occurring in the form of stinging, burning or stabbing. Semiologically speaking, there have been used terms such as hyperalgesia (extreme sensitivity to pain) and allodynia (pain sensation also occurs when performing a painless manoeuvre, such as a very light touch of the skin),

- fatigue ranges from mild to severe (when the patient feels extremely exhausted),
- disorders of sleep, feeling tired on awakening,
- numbness of the joints that occurs mainly in the morning, upon awakening, often accompanied by cramps,
- cognitive impairment ("fibrofog") consists of impaired concentration, from learning new things, attention issues, impaired short and long term memory,
- headaches can range from mild to severe migraine (even accompanied by vomiting); Frequently, tension-type headache occurs (cluster headache),
- other symptoms: irritable bowel syndrome, generalized paresthesia, restless feet syndrome, unusual periodic pain (especially for women), dizziness, anxiety, depression.

The most used diagnostic criteria are those developed in 1990 by the American College of Rheumatology, which define fibromyalgia by the following:

- a history of widespread pain lasting more than three months and that affects all four quadrants of the body,
- the existence of hot spots (there are defined 18 such hotspots in the skin).

Paraclinical diagnosis

On the electroencephalogram (EEG) of the patients with fibromyalgia, some researchers have revealed the presence of certain abnormalities in alpha waves activity during sleep with non-rapid eye movements.

Several studies accomplished with magnetic resonance spectroscopy revealed metabolic abnormalities in the hippocampus, a brain area that plays a crucial part in maintaining the cognitive functions, sleep and pain perception. The differential diagnosis is primarily set with the chronic fatigue syndrome (also known as myalgic encephalomyelitis), a condition that causes extreme fatigue and long-term rheumatoid arthritis with pains and swelling in the joints.

Treatment

The progress made in understanding the pathophysiology of this disease has led to improvements in treatment, including prescribing the best medication, cognitive behavioural therapy and physical exercises. This multidisciplinary approach is considered the gold standard in the treatment of chronic pain syndromes (which also includes fibromyalgia).

1. Drug treatment

Only three drugs are approved by the U.S. Food and Drug Administration (FDA) for fibromyalgia treatment. These are duloxetine (an antidepressant), milnacipran, an antidepressant indicated by the FDA for treating fibromyalgia only (not approved for sale in the European Union) and pregabalin (an antiepileptic used to treat neuropathic pain).(5)

Antidepressants are associated with improvements in pain, fatigue, sleep disorders and quality of life. In addition to the above mentioned antidepressants (duloxetine and milnacipran), tricyclic antidepressants (such as amitriptyline) are sometimes indicated.(6)

The indicated antiepileptic drugs are gabapentin and pregabalin. Gabapentin provided a significant benefit in about 30% of patients, but unfortunately its prolonged use is often associated with adverse effects.

Analgesics, in severe muscle pain, narcotic opioids.

The European League against Rheumatism recommends using the mild opioid – tramadol, especially for moderate and severe pain, but not the use of strong opioids. The combination of tramadol and paracetamol demonstrated efficacy, safety and tolerability. It is equally effective as the combination of codeine (another mild opioid) with paracetamol (combination that can produce constipation).(7)

The use of nonsteroidal anti-inflammatory drugs, (NSAIDs), such aspirin, ibuprofen, diclofenac and others is not considered first-line medication in the treatment of fibromyalgia. They inhibit the production of prostaglandins, substances that have an important part in pain and inflammation. Other drug treatments recommended are: growth hormone, muscle relaxants (cyclobenzaprine, tizanidine), dopamine agonists (pramipexole, ropinirole).(8) The emergence of therapeutic benefit can sometimes takes quite a lot (more than 3 months after amitriptyline and 6 months after the administration of duloxetine and pregabalin milnacipran).

2. Psychological therapies

Cognitive behavioural therapy has a slight or moderate effect in relieving symptoms. The greatest benefits occur when this type of therapy is associated with the physical exercises.(9,10)

3. Other non-pharmacological treatments include massages, acupuncture, chiropractic treatments etc.

REFERENCES

1. Sommer C, Häuser W, Burgmer M et al. Etiology and pathophysiology of fibromyalgia syndrome. *Schmerz* 2012;26:259-67.
2. Hawkins RA. Fibromyalgia: A Clinical Update. *Journal of the American Osteopathic Association* 2013;113:680-689.
3. Clauw DJ, Arnold LM, McCarberg BH. The science of fibromyalgia. *Mayo Clin Proc* 2011;86:907-11.
4. Clauw DJ. Fibromyalgia. *JAMA* 2014;311:1547.
5. Sommer C, Häuser W, Alten R, et al. Drug therapy of fibromyalgia syndrome. Systematic review, meta-analysis and guideline. *Schmerz* 2012;26:297-310.
6. Häuser W, Wolfe F, Tölle T, et al. The role of antidepressants in the management of fibromyalgia syndrome: a systematic review and meta-analysis. *CNS Drugs* 2012;26:297-307.
7. Ngian GS, Guymer EK, Littlejohn GO. The use of opioids in fibromyalgia. *Int J Rheum Dis* 2011;14:6-11.
8. Cuatrecasas G, Alegre C, Fernandez-Solà J, et al. Growth hormone treatment for sustained pain reduction and improvement in quality of life in severe fibromyalgia. *Pain* 2012;153:1382-1389.
9. Bernardy K, Füber N, Köllner V, Häuser W. Efficacy of cognitive-behavioral therapies in fibromyalgia syndrome – a systematic review and metaanalysis of randomized controlled trials. *J. Rheumatol* 2010;37: 1991-2005.
10. Glombiewski JA, Sawyer AT, Gutermann J, et al. Psychological treatments for fibromyalgia: a meta-analysis. *Pain* 2010;151:280-95.