Global Year Against Pain in Women

real women, real pain

Fibromyalgia Syndrome (FMS)

Definition:
Fibromyalgia Syndrome is defined as a common rheumatologic syndrome characterized by chronic, diffuse musculoskeletal pain and tenderness with a number of associated symptoms among which sleep disturbance and affective dysfunction are particularly frequent

Epidemiology and Economics:
- This syndrome affects 2% of the general population
- It occurs in all ages, ethnic groups and cultures
- Its gender distribution is nearly equal in childhood, but is up to sevenfold more common in females than males in adult age (50-60 years)
- FMS's impact on an individual's quality of life and physical function is substantial, comparable with that of rheumatoid arthritis (RA)
- Over 30% of FMS patients are forced to accept shorter work hours or less physically demanding work to maintain employment
- In the USA about 15% of patients currently receive disability funding because of their symptoms

Pathophysiology:
The pathophysiology of FMS is not completely clarified, a number of neuroendocrine[1], neurotransmitter[2] and neurosensory[3] disturbances have been implicated in its generation. The exposure of a genetically predisposed individual[4] to a variety of environmental stressors is supposed to lead to the development of FMS.
- *Neuroendocrine disturbance:* dysfunction of the hypothalamic-pituitary-adrenal axis, including blunted cortisol responses and lack of cortisol diurnal variation; abnormal growth hormone regulation
- *Neurotransmitter disturbance:* decreased serotonin in the central nervous system, elevated levels of spinal fluid substance P and nerve growth factor, decreased dopamine transmission in the brain
- *Neurosensory dysfunction:* central amplification of pain and/or reduced antinociception (central sensitization, abnormalities of descending inhibitory pain pathways)
- *Genetic predisposition:* strong familial aggregation for FMS. Mode of inheritance most probably polygenic. Evidence for a role of polymorphisms of genes in the serotoninergic, dopaminergic and catecholaminergic systems in the etiology of FMS

Diagnostic criteria:
The present criteria for FMS diagnosis are those established by the American College of Rheumatology Committee in 1990, i.e.:
1. A history of widespread pain (involving all 4 limbs and the trunk) of at least 3 months duration and
2. Tenderness to digital palpation (with a pressure of 4 kg) in at least 11 of 18 (9 symmetrical) pre-determined body districts called tender points (TePs)*

   * A tender point is defined as a site of exquisite tenderness in soft tissues which, in contrast to the Trigger Point of Myofascial Pain Syndromes, is not included in a taut, palpable band of muscle fibers, does not evoke a local twitch response under snapping palpation and does not refer pain at a distance when stimulated

A critical revision of the above criteria has been proposed by the International Pain Community. New criteria will probably be established in the forthcoming years.

Clinical features and Instrumental Findings
- FMS has either a gradual or a post-traumatic onset (physical injury, psychological stress)
- The spontaneous pain in FMS is described as a persistent, diffuse, deep, aching, throbbing, sometimes stabbing sensation in muscles; it can be recurrent but is most often continuous with periodical exacerbations

- Clinical symptoms associated with muscle pain in FMS are: affective dysfunction, cognitive deficits, short-term memory loss; throbbing occipital pain of muscle contraction headache; lightheadedness, dizziness, syncope; non-restorative sleep or chronic insomnia, nocturnal myoclonus, nocturnal bruxism; daytime tiredness resembling physical fatigue, prolonged morning stiffness, numbness, tingling, dysesthesia in hands and feet; abdominal/pelvic pain, diarrhea, constipation; frequency, urgency, sterile dysuria.
- A number of clinical conditions occur more frequently in FMS than in the general population (co-morbidities*)*:
    - depression [40% in FMS vs 10% in controls and 20% in people hospitalized for another medical condition]
    - anxiety [45% in FMS vs 21% in patients with other chronic pain conditions and 51% in patients with FMS plus other disorders]
    - irritable bowel syndrome (IBS) [up to 70% in FMS vs 20% in controls]
    - dysmenorrhea, interstitial cystitis (IC), other rheumatic conditions (rheumatoid arthritis, lupus erythematosus, Sjogren's syndrome), chronic fatigue syndrome**,** myofascial pain syndrome, low back pain, temporomandibular joint disorder
- FMS patients have abnormal reactivity to painful stimuli. They are *hypersensitive to painful stimuli* applied to somatic structures not only in painful sites but also in normal control areas; they exhibit lower than normal pain thresholds to thermal, mechanical, electrical and chemical stimuli at skin, subcutis and/or muscle level. They also have a reduction in nociceptive flexion reflex threshold compared to controls. The pain threshold to repeated intramuscular electrical stimulation is significantly lower for patients with FMS compared to control groups, indicating that the temporal nociceptive summation is more pronounced in the syndrome. Infusion of hypertonic saline evokes muscle pain with a longer duration in patients with FMS, and referred pain that spreads to a larger area than in controls.
- FMS patients have aberrant responses to pain seen on Functional Brain Neuroimaging. Resting brain blood flow studies have reported mixed findings for several brain regions, whereas decreased thalamic blood flow has been noted by several investigators. Recent studies also suggest an accelerated brain gray matter loss in fibromyalgia patients: premature aging of the brain?

Prognosis and Treatment

- FMS does not threaten the patients' life but can cause severe disability and thus substantially compromise the quality of life. Complete resolution of symptoms is almost never achieved, but significant improvement can be obtained with adequate therapy.
- Management of FMS is typically multimodal:
    a) accepting attitude from both physician and patient
    b) comprehensive clinical evaluation, accurate diagnosis
    c) education for affected individuals, family, society
    d) encourage patient to take an active role in self-care
    e) psychological or psychiatric support, biofeedback training
    f) physical therapies, physical modalities, exercise program
    g) sparing use of medications proven to be effective (low-dose tricyclic antidepressants (mostly amitriptyline) or other serotonin reuptake inhibitors, sedative, hypnotic medication, analgesics (tramadol), antiepileptics (gabapentin, pregabalin)
    h) regular monitoring and follow-up

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