Fibromyalgia Syndrome

Current Concepts

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Fibromyalgia (FM) is the most common cause of widespread musculo-skeletal pain and most patients also complain of chronic fatigue, non-restorative sleep, gastro-intestinal symptoms and widespread joint pain.[1,2] Failure to recognise FM often leads to over-investigation, over-treatment and inappropriate referrals because of the multiple symptoms of the disorder.

The American College of Rheumatology classification criteria of FM consist of: [3]

i. Widespread musculo-skeletal pain for 3 months or longer on both sides of the body as well as above and below the waist, including an axial distribution.

ii. The presence of 11 or more out of 18 specified tender points with moderate digital pressure of 4kg/cm^2.

Unlike myofascial pain syndrome (MPS) which is a regional pain disorder, the pain in FM is widespread and many patients "hurt all over".

Clinical features

The essential feature of FM is widespread musculoskeletal pain in the presence of multiple painful tender point sites.

Fatigue is a major complaint in most FM patients and the etiology is mostly multifactorial, including non-restorative sleep, deconditioning, depression and hypothalamic-pituitary-adrenal axis dysfunction.

Most FM patients have a higher number of arousals at night and this correlates with sleep EEG findings of an increase in stage 1 alpha-waves (representing arousal) and decreased delta-waves in stages 3 and 4 non-REM sleep (representing restorative sleep).[4,5]

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Neuro-cognitive impairment has been described in short-term memory processing and concentration, and could be related to the role of serotonin in the processing of sensory information.[6]

Patients with FM often have a variety of overlapping conditions or syndromes. These include irritable bowel syndrome, restless legs syndrome, irritable bladder, chronic fatigue syndrome, regional myofascial pain, non-cardiac chest pain, chronic pelvic pain, tension-type headaches and migraine. There is also an association with mood and somatoform disorders. An overlap between pain and other mono-aminergic pathways may explain the sleep and mood symptoms associated with FM. Autonomic dysfunction may be present, including neurally mediated hypotension and symptoms such as dizziness and vertigo.[7]

Psychosocial factors may influence the presentation of FM and may include maladaptive coping mechanisms, fear-avoidance and "sick-role" behaviour. The emotional component of pain is complex and is influenced by past experiences, beliefs, fears and also genetic factors.[8]

Pathogenesis

There is increasing evidence that the basic problem in FM is "central sensitisation" with disordered sensory processing of pain impulses in the spinal cord. There is loss of pain regulation in the central nervous system resulting in pain amplification.[9,10] The interaction between peripheral pain generators and abnormal central processing of pain generate the wide spectrum of symptoms in FM patients.[11] Serotonin modulates incoming pain impulses and has been demonstrated to be low in the cerebrospinal fluid of FM patients, while substance P levels have been shown to be high and appear to be a biological marker for the presence of chronic pain.[12,13]

FM is also commonly found in disorders with longstanding musculoskeletal pain, e.g. rheumatoid arthritis, osteo-arthritis and systemic lupus erythematosis – this has been referred to as secondary fibromyalgia.[14]

Evidence for the role of genetics in FMS comes from studies demonstrating familial aggregation in FMS. Polymorphisms of genes in the serotonergic, dopaminergic and catecholominergic systems have been demonstrated in FM and co-morbid conditions.[15]

FM is thus a pain disorder with a complex interaction between disordered pain processing, genetic predisposition, cognitive patterns and exposure to stressors that form the basis for the pain and other symptoms.[16]