

FIBROMYALGIA: ABSTRACTS 2001 FROM ARTICLES IN MEDICAL JOURNALS

The abstracts in this collection are intended to provide doctors and other health professionals with a convenient overview of trends in research on fibromyalgia published in medical journals in the year 2001. The studies were selected from the extensive literature on fibromyalgia so as to cover a wide range of subjects in limited space. The abstracts are arranged in alphabetical order by lead author.

The following studies were published in the period January to March, 2001. Additional abstracts will be added to this selection at intervals during the year. Similar collections of abstracts published in 1999 and 2000 can be found on the website of the National Fibromyalgia Partnership: www.fmpartnership.org.

Aaron LA, Buchwald D

Fibromyalgia and other unexplained clinical conditions

Several unexplained clinical conditions frequently coexist with fibromyalgia; these include chronic fatigue syndrome, irritable bowel syndrome, temporomandibular disorder, tension and migraine headaches, and others. However, only recently have studies directly compared the physiological parameters of these conditions (e.g., fibromyalgia vs. irritable bowel syndrome) to elucidate underlying pathogenic mechanisms. This review summarizes data from comparative studies and discusses their implications for future research.

Curr Rheumatol Rep 2001 Apr; 3(2):116–22

Anthony KK, Schanberg L

Juvenile primary fibromyalgia syndrome

Juvenile primary fibromyalgia syndrome (JPFS) is a common musculoskeletal pain syndrome of unknown etiology characterized by widespread persistent pain, sleep disturbance, fatigue, and the presence of multiple discrete tender points on physical examination. Other associated symptoms include chronic anxiety or tension, chronic headaches, subjective soft tissue swelling, and pain modulated by physical activity, weather, and anxiety or stress. Research and clinical observations suggest that JPFS may have a chronic course that impacts the functional status and psychosocial development of children and adolescents. In addition, several factors have been implicated in the etiology and maintenance of JPFS including genetic and anatomic factors, disordered sleep, psychological distress, and familial and environmental influences. A multidisciplinary approach to treatment of JPFS is advocated, including pharmacologic and nonpharmacologic interventions (e.g., psychotherapy, aerobic exercise, sleep hygiene).

Curr Rheumatol Rep 2001 Apr; 3(2):165–71

Clark SR, Jones KD, Burckhardt CS, Bennett R

Exercise for patients with fibromyalgia: risks versus benefits

Although exercise in the form of stretching, strength maintenance, and aerobic conditioning is generally considered beneficial to patients with fibromyalgia (FM), there is no reliable evidence to explain why exercise should help alleviate the primary symptom of FM, namely pain. Study results are varied and do not provide a uniform consensus that exercise is beneficial or what type, intensity, or duration of exercise is best. Patients who suffer from exercise-induced pain often do not follow through with recommendations. Evidence-based prescriptions are usually inadequate because most are based on methods designed for persons without FM and, therefore, lack individualization. A mismatch between exercise intensity and level of conditioning may trigger a classic neuroendocrine stress reaction. This review considers the adverse and beneficial effects of exercise. It also provides a patient guide to exercise that takes into account the risks and benefits of exercise for persons with FM.

Curr Rheumatol Rep 2001 Apr; 3(2):135–40

Crofford LJ, Appleton BE

Complementary and alternative therapies for fibromyalgia

Fibromyalgia (FM) is a syndrome of chronic widespread musculoskeletal pain that is accompanied by sleep disturbance and fatigue. Clinical treatment usually includes lifestyle modifications and pharmacologic interventions meant to relieve pain, improve sleep quality, and treat mood disorders. These therapies are often ineffective or have been shown in clinical studies to have only short-term effectiveness. Pharmacologic treatments have considerable side effects. Patients may have difficulty complying with exercise-based treatments. Thus, patients seek alternative therapeutic approaches and physicians are routinely asked for advice about these treatments. This article reviews nontraditional treatment alternatives, from use of nutritional and herbal supplements to acupuncture and mind-body therapy. Little is known about efficacy and tolerance of complementary and alternative therapies in FM and other chronic musculoskeletal pain syndromes. Most studies on these treatments have been performed for osteoarthritis, rheumatoid arthritis, or focal musculoskeletal conditions. Clinical trials are scarce; the quality of these trials is often criticized because of small study population size, lack of appropriate control interventions, poor compliance, or short duration of follow-up. However, because of widespread and growing use of alternative medicine, especially by persons with chronic illnesses, it is essential to review efficacy and adverse effects of complementary and alternative therapies.

Curr Rheumatol Rep 2001 Apr; 3(2):147–56

Glass JM, Park DC

Cognitive dysfunction in fibromyalgia

Fibromyalgia is a puzzling syndrome of widespread musculoskeletal pain. In addition to pain, patients with fibromyalgia frequently report that cognitive function, memory, and mental alertness have declined. A small body of literature suggests that there is cognitive dysfunction in fibromyalgia. This article addresses several questions that physicians may have regarding cognitive function in their patients. These questions concern the types of cognitive tasks that are problematic for patients with fibromyalgia, the role of psychological factors such as depression and anxiety, the role of physical factors such as pain and fatigue, the nature of patients' perceptions of their cognitive abilities, and whether patients can be tested for cognitive dysfunction. Critical areas for further investigation are highlighted.

Curr Rheumatol Rep 2001 Apr; 3(2):123–7

Jentoft ES, Kvalvik AG, Mengshoel AM

Effects of pool-based and land-based aerobic exercise on women with fibromyalgia/chronic widespread muscle pain

OBJECTIVE : To examine the effects of pool-based (PE) and land-based (LE) exercise programs on patients with fibromyalgia. METHODS: The outcomes were assessed by the Fibromyalgia Impact Questionnaire, the Arthritis Self-Efficacy Scale, and tests of physical capacity. RESULTS: Eighteen subjects in the PE group and 16 in the LE group performed a structured exercise program. After 20 weeks, greater improvement in grip strength was seen in the LE group compared with the PE group ($p < 0.05$). Statistically significant improvements were seen in both groups in cardiovascular capacity, walking time, and daytime fatigue. In the PE group improvements were also found in number of days of feeling good, self-reported physical impairment, pain, anxiety, and depression. The results were mainly unchanged at 6 months follow-up. CONCLUSION: Physical capacity can be increased by exercise, even when the exercise is performed in a warm-water pool. PE programs may have some additional effects on symptoms.

Arthritis Rheum 2001 Feb; 45(1):42–7

Landis CA, Lentz MJ, Rothermel J, Riffle SC, Chapman D, Buchwald D, Shaver JL

Decreased nocturnal levels of prolactin and growth hormone in women with fibromyalgia

Fibromyalgia (FM) is a complex syndrome, primarily of women, characterized by chronic pain, fatigue, and sleep disturbance. Altered function of the somatotrophic axis has been documented in patients with FM, but little is known about nocturnal levels of prolactin (PRL). As part of a laboratory study of sleep patterns in FM, we measured the serum concentrations of GH and PRL hourly from 2000-0700 h in a sample of 25 women with FM (mean, 46.9 +/- 7.6 yr) and in 21 control women

(mean, 42.6 +/- 8.1 yr). The mean (+/-SEM) serum concentrations (micrograms per L) of GH and of PRL during the early sleep period were higher in control women than in patients with FM [GH, 1.6 +/- 0.4 vs. 0.6 +/- 0.2 ($p < 0.05$); PRL, 23.2 +/- 2.2 vs. 16.9 +/- 2.0 ($p < 0.025$)]. The mean serum concentrations of GH and PRL increased more after sleep onset in control women than in patients with FM [GH, 1.3 +/- 0.4 vs. 0.3 +/- 0.2 ($p < 0.05$); PRL, 16.2 +/- 2.4 vs. 9.7 +/- 1.5 ($p < 0.025$)]. Sleep efficiency and amounts of sleep or wake stages on the blood draw night were not different between groups. There was a modest inverse relationship between sleep latency and PRL and a direct relationship between sleep efficiency and PRL in FM. There was an inverse relationship between age and GH most evident in control women.

J Clin Endocrinol Metab 2001 Apr; 86(4):1672-8

Legangneux E, Mora JJ, Spreux-Varoquaux O, Thorin I, Herrou M, Alvado G, Gomeni C

Cerebrospinal fluid biogenic amine metabolites, plasma-rich platelet serotonin and [(3)H]imipramine reuptake in the primary fibromyalgia syndrome

BACKGROUND: Primary fibromyalgia syndrome (PFS) is a chronic disorder commonly seen in rheumatological practice. The pathophysiological disturbances of this syndrome, which was defined by the American College of Rheumatology in 1990, are poorly understood. This study evaluated, in 30 patients, the hypothesis that PFS is a pain modulation disorder induced by deregulation of serotonin metabolism. OBJECTIVES: To compare platelet [(3)H]imipramine binding sites and serotonin (5-HT) levels in plasma-rich platelets (PRP) of PFS patients with those of matched healthy controls and to compare the levels of biogenic amine metabolites in the cerebrospinal fluid (CSF) of PFS patients with those of matched controls. METHODS: Platelet [(3)H]imipramine binding sites were defined by two criteria, B(max) for their density and K(d) for their affinity. PRP 5-HT and CSF metabolites of 5-HT (5-hydroxyindoleacetic acid, 5-HIAA), norepinephrine (3-methoxy, 4-hydroxy phenylglycol, MHPG) and dopamine (homovanillic acid, HVA) were assayed by reversed-phase high-performance liquid chromatography with coulometric detection. RESULTS: [(3)H]imipramine platelet binding was similar ($p = 0.43$ for B(max) and $p = 0.30$ for K(d)) in PFS patients (B(max)=901+/-83 fmol/mg protein, K(d)=0.682+/-0.046) and in matched controls (B(max)=1017+/-119 fmol/mg protein, K(d)= 0.606+/-0.056). PRP 5-HT was significantly higher ($p = 0.0009$) in PFS patients (955+/-101 ng/10(9) platelets) than in controls (633+/-50 ng/10(9) platelets). When adjusted for age, the levels of all CSF metabolites were lower in PFS patients. The CSF metabolite of norepinephrine (MHPG) was lower ($p = 0.003$) in PFS patients (8.33+/-0.33 ng/ml) than in matched controls (9.89+/-0.31 ng/ml) and 5-HIAA was lower ($p = 0.042$) in PFS female patients (22.34+/-1.78 ng/ml) than in matched controls (25.75+/-1.75 ng/ml). For HVA in females, the difference between PFS patients (36.32+/-3.20 ng/ml) and matched controls (38.32+/-2.90 ng/ml) approached statistical significance ($p = 0.054$). CONCLUSION: Changes in metabolites of CSF biogenic amines appear to be partially correlated to age but remained diagnosis-dependent.

High levels of PRP 5-HT in PFS patients were associated with low CSF 5-HIAA levels in female patients but were not accompanied by any change in serotonergic uptake as assessed by platelet [(3)H]imipramine binding sites. These findings do not allow us to confirm that serotonin metabolism is deregulated in PFS patients.

Rheumatology (Oxford) 2001 Mar; 40(3):290–6

Werle E, Fischer HP, Muller A, Fiehn W, Eich W

Antibodies against serotonin have no diagnostic relevance in patients with fibromyalgia syndrome

OBJECTIVE : To determine the prevalence and potential diagnostic relevance of autoantibodies against serotonin, thromboplastin, and ganglioside Gm1 in patients with fibromyalgia syndrome (FM). METHODS: Sera from 203 patients with FM and 64 pain-free control subjects were analyzed with enzyme immunoassays. Clinical and psychometric data of the patients were analyzed for the presence or absence of autoantibodies. RESULTS: Compared with control subjects patients with FM had a significantly higher prevalence of autoantibodies against serotonin (20% vs 5%; $p = 0.003$) and thromboplastin (43% vs 9%; $p < 0.001$), but not against ganglioside Gm1 (15% vs 9%; $p = 0.301$). Differences in autoantibody prevalence between controls and FM patients were not related to age or sex. No association was found between autoantibody pattern and clinical or psychometric data, e.g., pain, depression, pain related anxiety, and activities of daily living. CONCLUSION: There is an elevated prevalence of antibodies against serotonin and thromboplastin in patients with FM. The pathophysiological significance of this finding is unknown. Calculation of positive predictive values of antiserotonin antibodies shows that measurement of these antibodies has no diagnostic relevance.

J Rheumatol 2001 Mar; 8(3):595–600

Wittrup IH, Jensen B, Bliddal H, Danneskiold-Samsøe B, Wiik A

Comparison of viral antibodies in 2 groups of patients with fibromyalgia

OBJECTIVE : The etiologies of fibromyalgia (FM) are unknown. In some cases an acute onset following a flu-like episode is described; in other cases patients report slowly developing disease. We previously found increased prevalence of enterovirus IgM antibodies in patients with acute onset of FM compared to healthy controls. We looked for differences in antimicrobial IgM antibodies in acute versus nonacute onset FM. METHODS: Two well defined, comparable groups of patients with FM (acute 19, nonacute 20) were studied for antibodies in serum to an array of viruses including IgM antibodies. RESULTS: In most viruses no IgM antibodies were found. However, about 50% of the patients with acute FM onset had IgM antibodies against enterovirus compared to only 15% of the slow onset patients. CONCLUSION: The higher prevalence of IgM antibodies against enterovirus in patients with acute onset of FM may indicate a difference in the etiology or the immune response in these patients.

J Rheumatol 2001 Mar; 8(3):601–3

Yunus MB

The role of gender in fibromyalgia syndrome

Fibromyalgia syndrome (FMS), characterized by widespread pain and tenderness on palpation (tender points), is much more common in women than in men in a proportion of 9:1. Two recent studies have shown important gender differences in various clinical characteristics of FMS. In a community and a clinic sample, women experienced significantly more common fatigue, morning fatigue, hurt all over, total number of symptoms, and irritable bowel syndrome. Women had significantly more tender points. Pain severity, global severity and physical functioning were not significantly different between the sexes, nor were psychological factors, e.g., anxiety, stress, and depression. Gender differences have also been observed in other related syndromes, e.g., chronic fatigue syndrome, irritable bowel syndrome, and headaches. The mechanisms of gender differences in these illnesses are not fully understood, but are likely to involve an interaction between biology, psychology, and sociocultural factors.

Curr Rheumatol Rep 2001 Apr; 3(2):128–34