



The Association of Irritable Bowel Syndrome and Fibromyalgia

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Irritable bowel syndrome (IBS) is a very common gastrointestinal condition, which is present in 8-20% of the general population. Several population-based studies have demonstrated IBS symptoms to be more common in women, with prevalence ratios ranging from 2 to 3:1. It has been estimated to affect 14-24% of women and 5-19% of men. The classic gastrointestinal symptoms of IBS are chronic or recurrent abdominal pain and/or discomfort and associated alterations in bowel habits. However, many individuals with IBS also suffer from non-gastrointestinal symptoms. Rheumatologic symptoms, such as skin rashes, muscle contraction headache and myalgias, have been reported in two-thirds of IBS patients. Previous studies have found that IBS typically overlaps with fibromyalgia syndrome (FM) in the same patient, suggesting a common cause. FM occurs in up to 60% of patients with irritable bowel syndrome (IBS). Up to 70% of patients with a diagnosis of FM have symptoms of IBS.

FM belongs to a general class of chronic musculoskeletal pain syndromes. It is a common pain disorder in which the presence of multiple muscular tender points is associated with characteristic symptoms of generalized muscle aching, stiffness, fatigue and an abnormal sleep pattern. Following osteoarthritis and rheumatoid arthritis, FM is the most common disorder seen in community rheumatologic practice. In rheumatology clinics, the proportion of new patients with FM syndrome ranges from 10% to 20%, while in non-specialized settings, the reported prevalence is less, 2.1% to 5.7%. FM affects 2% for both sexes, 3.4% for women and 0.5% for men. The diagnosis of FM is presently defined by criteria, which consists of widespread pain and presence of painful tender points established by the American College of Rheumatology in 1990.

Although IBS is a chronic gastrointestinal pain condition and FM is a chronic muscular pain disorder, IBS and FM have common clinical characteristics: (1) both are functional pain disorders which cannot be explained by structural or biochemical abnormalities, (2) both occur predominantly in women, (3) the majority of patients associate stressful life events with the onset or exacerbation of symptoms, (4) the majority of patients complain of disturbed sleep and fatigue, (5) psychotherapy and behavioral therapies are efficacious in treating symptoms, and (6) certain medications can treat symptoms of both conditions. It has been suggested that IBS and FM have a common cause and that specific physiologic alterations may be responsible for the symptoms seen in these two conditions.

While IBS is a condition characterized by visceral (intestinal) hypersensitivity, FM is a condition of somatic (skin and muscle) hypersensitivity. There have been several studies, which have shown that IBS patients have normal or decreased somatic sensitivity. We have recently completed somatic perception studies in female patients with IBS alone, both IBS + FM, and healthy individuals (see Chang et al.). The response to pressure which was placed on particular muscle tender points was measured. Like FM patients, patients with IBS + FM demonstrate somatic hyperalgesia (increased somatic pain sensation). However, patients with IBS alone have somatic hypoalgesia (decreased somatic pain sensation). This study demonstrates that while IBS patients have increased sensitivity to visceral pain, they are less sensitive to somatic pain.

Only a couple of studies have evaluated visceral sensation in FM patients using a balloon catheter placed in the rectum and lower large intestine (colon). The balloon catheter is connected to a computerized pump which inflates the balloon and thus reaches specific pressure levels in the bowel. The patient's sensations in response to the balloon inflation can be measured. These studies have reported that patients with FM with or without IBS have visceral perception in between that of healthy controls and IBS patients. These data suggest that IBS have altered perceptual responses to visceral and somatic pain/discomfort and the coexistence of FM alters these perceptual responses.

Recent studies using brain-imaging techniques have found alterations in how the brain processes visceral information in IBS. To determine if similar altered responses to visceral and somatic pain information occurs in patients with IBS and FM, we have compared the brain responses to visceral and somatic stimuli in patients with IBS alone, IBS + FM, and healthy individuals. Brain responses are assessed by positron emission tomography (PET), which can measure blood flow to brain areas in response to a particular stimulus. Results have shown that patients with both IBS and FM have greater brain responses in areas which are involved in pain, memory retrieval of past pain experiences and increased attention or awareness to a stimulus than the other subject groups. Recent functional brain imaging studies have suggested that alterations in the processing of sensations by the brain play an important role in IBS and FM. In summary, clinical characteristics and a significant overlap of symptoms suggest that the functional syndromes IBS and FM may have a common etiology. Visceral and somatic perception studies and brain imaging have demonstrated that each of these conditions have specific responses to painful stimuli and that patients with both IBS and FM may have responses to somatic and visceral stimuli that are uniquely different from that of IBS alone and FM alone. Further studies are being performed in these common conditions to further our understanding of chronic visceral and somatic pain conditions and lead to more effective treatment.

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