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Medscape Medical News from the:

6th World Congress of the World Institute of Pain

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From Medscape Medical News

Pain Negatively Affects Cognition in Fibromyalgia

Kate Johnson

Authors and Disclosures

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February 6, 2012 (Miami Beach, Florida) — Pain is the primary factor contributing to cognitive impairment in patients with fibromyalgia syndrome, over and above depression, anxiety, fatigue, sleep complaints, and medication use, reported Stefan Duschek, PhD, from the University of Munich, in Germany, here at the 6th World Congress of the World Institute of Pain.

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Patients with fibromyalgia scored worse than healthy control subjects on mathematical thinking and attentional control. "A large part

of the variance on these tests was explained by pain," said Dr. Duschek in an interview with *Medscape Medical News*. "The most important factor underlying these deficits is pain, nothing else; it's not depression, it's not anxiety, but pain."

The findings corroborate the presence of substantive cognitive impairment in patients with fibromyalgia, although the debate remains open, said Dr. Duschek.

This study "adds evidence to the suggestion that the most important factor is pain. There are interactions between pain, anxiety, depression, and cognitive function...but the most important factor seems to be pain."

The researchers compared 35 patients with fibromyalgia and 29 healthy control subjects. All participants completed the Uchida-Kraepelin test, a neuropsychologic instrument that quantifies numerical ability, attentional control, and speed of cognitive processing. Performance is measured in 5 separate 1-minute intervals to evaluate improvement in performance over time.

Possible predictors of cognitive function were measured, including pain (using the McGill Pain Inventory), depression (using the Beck Depression Inventory), anxiety (using the State-Trait Anxiety Inventory), fatigue and sleep (using the Fatigue Severity Scale and the Oviedo Sleep Questionnaire), and medication intake, including antidepressants, antianxiolytics, and opiate and nonopiate pain medication.

During each of the 5 task periods, the number of calculations performed was lower in the fibromyalgia group than in the control group ($P < .01$), and improvement in performance over time was less pronounced ($P < .05$).

Of interest, patients taking opiate medication performed better than those who were not ($P < .05$). "Our hypothesis was the opposite — that opiates disrupt cognitive function — but it makes sense; it reduces pain intensity so people can concentrate better," said Dr. Duschek.

In fact, higher pain ratings predicted lower cognitive performance ($P < .05$), whereas depression, anxiety, fatigue, and sleep complaints were unrelated, he said.

"Pain is an attention-demanding condition; one may suppose that central nociceptive activity detracts from cognition by requiring enhanced neural processing resources."

Chronic pain does have "a unique impact on the brain," agreed Magdalena Naylor, MD, PhD, professor of psychiatry and director of the clinical neuroscience research unit at the University of Vermont's MindBody Medicine Clinic in Burlington, when asked to comment.

"These are interesting findings and they confirm that it is important to treat pain as early and completely as possible," she told *Medscape Medical News*. "However, opioid medication is not the only way to reduce the pain. Many studies have documented that cognitive behavioral therapy [CBT] can not only improve coping with pain, but also decrease pain sensation."

"We speculate that CBT may improve cognitive function in patients with fibromyalgia, not only by decreasing pain sensation, but also independently, by improving attention and concentration. This hypothesis is now being tested by the scientists at the Clinical Neuroscience Research Unit at the University of Vermont," she said.

The research was supported by a grant from the Spanish Ministry of Science and Innovation and cofinanced by Fonds Européen de Développement Régional (FEDER Project PSI2009-09812). Dr. Duschek has disclosed no relevant financial relationships. Dr. Naylor has disclosed no relevant financial relationships.

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