Painkiller reduces hypersensitivity to pain in patients with fibromyalgia

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(Medical Xpress)—Patients diagnosed with fibromyalgia complain of chronic pain throughout their bodies, but often doctors have difficulty detecting what causes the pain, and therefore, how to treat it.

These patients also complain of hyperalgesia, or increased sensitivity to pain. A University of Florida study published in the July issue of the *European Journal of Pain* has found that injections of the painkiller lidocaine in peripheral tissues such as muscles in the shoulders or buttocks reduced hyperalgesia, bringing researchers one step closer to understanding how chronic pain works within these patients.

"We hypothesized that if pain comes from the peripheral tissues, and we can take this pain away by injecting local anesthetics, then this would be indirect proof of the importance of peripheral tissues for the clinical pain of these individuals," said Dr. Roland Staud, a professor of medicine within the UF College of Medicine's department of medicine.

Sixty-two women diagnosed with fibromyalgia were involved in the study. Each woman received two injections in the trapezius muscles of the shoulders and the gluteal muscles of the buttocks, for a total of four injections per patient. The women were divided into several groups and given mechanical and heat pain stimuli immediately before and then 30 minutes after the injections. One group received four saline injections. The second group received four lidocaine injections.

Although the lidocaine injections significantly reduced hyperalgesia, the

placebo injections did not. The study also found that the lidocaine and saline placebo injections both resulted in a 38 percent reduction in patients' clinical pain, or the pain a person feels at the point of injury as well as pain radiating throughout the area near the injury. There was no statistical difference between the painkiller and the saline placebo.

Treatment of chronic pain is difficult because doctors often can't detect evidence of injury at the site where patients experience pain, Staud said. But chronic pain affects the body differently than, for example, a single incident such as a leg break. It actually changes nerve function along patients' spinal cords, said Michael Robinson, director of the UF Center for Pain Research and Behavioral Health.

He said hyperalgesia is a phenomenon in which the nervous system becomes sensitized to stimulation, amplifying the intensity perceived by the patient. Knowing what kind of treatment is successful in treating this sensitivity could bring researchers closer to providing relief to patients—combating their hyperalgesia and curbing chronic pain.

"The best way to treat chronic pain conditions is multidisciplinary and multimodal, looking at emotional, sensory and tissue damage. We know there are central and peripheral and social and behavioral components to someone saying, 'Ow, it hurts,'" said Robinson, also a professor in the department of clinical and health psychology in the UF College of Public Health and Health Professions.

For example, in a person with a history of cancer pain, even if the cancer has been treated and is in remission, experiencing new pain in the afflicted area can trigger associations with the pain surrounding the patient's cancer, including fears about the patient's prognosis and anxiety about treatment.

"That sensation may well feel more painful than if they just thought it

was a tweaked a muscle," Robinson said.

Staud said the study can help them develop better ways of managing chronic pain.

"Over-the-counter medications and prescriptions such as opiates aren't really effective for controlling chronic pain conditions," Staud said. "We are able to explain the pain of chronic patients better and manage it better. We are making progress but it will take time."

More information: Staud, R., Weyl, E.E., Bartley, E., Price, D.D. and Robinson, M.E. (2014), "Analgesic and anti-hyperalgesic effects of muscle injections with lidocaine or saline in patients with fibromyalgia syndrome." *European Journal of Pain*, 18: 803–812. DOI: 10.1002/j.1532-2149.2013.00422.x

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