Don’t Let Fear of Opioid Abuse Inhibit Therapies

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WASHINGTON — Low-intensity isometric exercise appears to significantly ease the perception of pain in healthy young adults, suggesting that such maneuvers could be a pain management tool for older adults with chronic pain conditions but limited mobility, according to research presented at the annual meeting of the American Pain Society.

In the study, 22 college-age adults performed isometric contractions of the left elbow flexor muscle at an intensity equal to a quarter of their maximal voluntary contraction until task failure. Following the exercises, the duration it took for patients to first feel experimental pain, or the pain threshold, increased by 50%, compared with baseline, reported Marie Hoeger Bement, Ph.D., professor of physical therapy at Marquette University in Milwaukee.

These findings could have important implications for patients with chronic pain conditions. “Isometric contractions are very easy to prescribe and individualize.” These exercises are useful in patients with limited mobility or a fear of falling,” said Dr. Bement. These exercises are especially useful in patients with limited mobility or a fear of falling.” Almost anybody can do it.”

In a previous study, participants’ baseline pain threshold, a weighted blade was placed for 2 minutes on the right index finger of the 11 men and 11 women. The students held a timer in their left hands and were instructed to trigger the timer when they first felt pain. The students also were asked to rate their pain on a 0-10 point scale every 20 seconds during the 2-minute test.

Each student participated in four sessions. For the first session, students performed three maximal voluntary contractions (2 seconds in duration). The next three sessions were randomized.

Patients could be asked to perform a contraction at 25% maximal voluntary contraction for 8 minutes on average, at 25% maximal voluntary contraction for 2 minutes, or at 80% maximal voluntary contraction for 40 seconds on average. A force transducer measured the force of the contractions. Intensity was based on a percentage of the maximal contraction.

During the session of three maximal voluntary contractions, there was a statistically significant increase in pain threshold over baseline, a finding that Dr. Bement said was “very surprising.” She added, “I’m amazed at what potential exercise has in managing some of chronic pain conditions.”

Pain ratings at 40, 60, and 80 seconds also were significantly decreased. The effect on pain rating appears to be short lived, however, as pain ratings returned to baseline levels by 2 minutes.

When students performed at 80% maximal voluntary contraction, there was no change in the pain threshold; however, there were improvements in pain ratings at 40 and 60 seconds. When students performed at 25% maximal voluntary contraction for 2 minutes, there were no changes in either the pain threshold or the pain ratings.

During the low-intensity, long-duration session, women reported greater pain ratings than did men, both before and after contractions. Women also reported greater increases in pain than did men during the 2 minutes measured.

“What’s really exciting is that women have a tendency to report greater decreases in pain than men after that low-intensity, long-duration contraction.” So they’re experiencing a greater analgesic effect than are men, Dr. Bement said.

To assess whether the sex difference in pain perception was because of hormonal fluctuations in the women, the researchers recruited 20 healthy, college-age women to perform the low-intensity, long-duration voluntary contraction to failure, there was a roughly 50% increase in pain threshold over baseline. Likewise, pain ratings were decreased at all time points between 40 and 120 seconds.

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“The thing that really tracks the drugs from the manufacturer to the pharmacy only and does not help a physician to monitor patient use. AcetRX is planning to use computerized dispensers for nanotab products that will allow physicians to download a patient’s dosing history. Such technology also could be helpful in assuring that patients aren’t confused by dosing regimens.”