EMG Reveals Subtle Postpartum Nerve Injury

BY MICHELE G. SULLIVAN
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SAVANNAH, GA. — Even women who have no symptoms of postpartum fecal incontinence can show subtle signs of pudendal nerve injury, Thomas Gregory, M.D., reported in a poster at the annual meeting of the American Association of Electrodiagnostic Medicine.

"There can be detectable evidence of nerve injury in asymptomatic women after a vaginal delivery, and there is evidence of even more injury in women who do have some bowel incontinence post partum," commented Dr. Gregory of Oregon Health and Science University, Portland.

Because symptoms of fecal incontinence may not manifest for years, the influence of nerve injury sustained in childbirth has been debated, he said. Most previous studies have relied on pudendal nerve terminal motor latency, but this test is abnormal only when the largest, most heavily myelinated nerves are damaged; it does not detect subtle injury.

Needle electromyography (EMG) is a better way to assess this, but the test is difficult to perform on anal sphincter muscles, because these muscles are always contracted to maintain continence. However, a computer program using multi-motor unit action potential analysis can measure important quantitative parameters in these constantly contracted muscles.

Dr. Gregory obtained readings on 71 women (of whom 28 were nulliparous and 43 were primiparous). Of the primiparous women, 23 were asymptomatic at 12 weeks post partum, and 20 reported some level of fecal incontinence by 26-40 weeks post partum.

All primiparous subjects had vaginally delivered a single cephalic fetus with a mean birth weight of 3.495 kg; the mean length of second-stage labor was 75 minutes. There was one operative vaginal delivery in the asymptomatic group, and there were three in the symptomatic group.

Documented at birth were two anal sphincter lacerations in the asymptomatic group and four in the symptomatic group.

All women underwent an ultrasound examination of the anal sphincter. Pudendal nerve terminal motor latency (PNTML) was also assessed. Then, each woman underwent concentric needle EMG of the external anal sphincter. PNTML was not different among the three groups.

Three of the symptomatic women showed evidence of either persistent (noted originally at birth) or occult (not seen originally at birth) sphincter disruption on ultrasound. None of these women were incontinent to solid stool.

'There can be detectable evidence of nerve injury in asymptomatic women.'

DR. GREGORY

However, significant differences were seen between the primiparous and the nulliparous subjects in the motor unit action potentials recorded by EMG.

Both primiparous groups showed increased duration, amplitude, turns, and phases compared to the nulliparous group. These are signs of denervation/reinnervation and indicative of nerve injury. The injuries were probably caused by the compression and stretching of the pudendal nerve during childbirth, Dr. Gregory said.

The symptomatic women showed higher readings in all parameters than the asymptomatic women, indicating that they had experienced a more severe injury. ■

New Drug for Overactive Bladder Lacks Cognitive Side Effects

BY BRUCE JANCIN
Denver Bureaus

ORLANDO, FLA. — Darifenacin, a selective muscarinic M3 receptor antagonist approved last month for the treatment of overactive bladder, doesn't affect cognition in the elderly at clinically effective doses, Richard B. Lipton, M.D., reported at Wonca 2004, the conference of the World Organization of Family Doctors.

Darifenacin (Enablex) thus stands in marked contrast to traditional antimuscarinic agents, which are effective for overactive bladder but have a high rate of limiting cognitive side effects due to their broad spectrum of action. Older antimuscarinic drugs lack selectivity for the M3 receptor, which regulates detrusor muscle function, and often cause collateral blockade of central muscarinic M1 receptors, with resultant cognitive impairment and sleepiness, explained Dr. Lipton, professor and vice chair of neurology and professor of psychiatry at Albert Einstein College of Medicine, New York.

The Food and Drug Administration approved darifenacin extended-release tablets at once daily doses of 7.5 mg and 15 mg last month The drug, which is being marketed by Novartis, is indicated for the treatment of overactive bladder with symptoms of urge urinary incontinence, urgency, and frequency.

At the meeting Dr. Lipton presented a Novartis-sponsored randomized controlled trial of darifenacin that focused on the drug's cognitive impact rather than on clinical efficacy, which has already been established in numerous clinical trials totaling more than 10,000 subjects.

He reported on 129 subjects aged 65-84 years who participated in a randomized, double-blind, placebo-controlled crossover study in which they received 2-week courses of three of four regimens: darifenacin at 3.75, 7.5, or 15 mg once daily, or placebo.

The primary study end points consisted of scores on a battery of cognitive function tests assessing memory scanning sensitivity, speed-of-choice reaction time, and delayed word recognition sensitivity.

There was no change from baseline in mean scores on any of the cognitive tests over the course of 14 days of darifenacin at any of the studied dosages. Nor were test scores while on darifenacin significantly different than with placebo.

The most common darifenacin-related adverse events were mild to moderate non–treatment-limiting constipation and dry mouth, each of which was reported in 4%-12% of patients on various dosages.

There were no ECG abnormalities, which can occur with blockade of the muscarinic M2 receptor. ■