



### BOTULINUM NEUROTOXIN TYPE A SELECTIVELY INHIBITS MENINGEAL NOCICEPTORS

As a rule, botulinum neurotoxin type A (BoNT-A) inhibited C- but not A -meningeal nociceptors, according to a new analysis. When applied to nonsensitized C-units, BoNT-A inhibited responses to mechanical stimulation of the dura with suprathreshold forces. When applied to sensitized units, BoNT-A reversed mechanical hypersensitivity. When applied before sensitization, BoNT-A prevented development of mechanical hypersensitivity. When applied extracranially to suture branches of intracranial meningeal nociceptors, BoNT-A inhibited the mechanical responsiveness of the suture branch but not dural axon. In contrast, BoNT-A did not inhibit C-unit responses to mechanical stimulation of the dura with threshold forces, or their spontaneous activity.

Researchers say these findings suggest that BoNT-A interferes with neuronal surface expression of high-threshold mechanosensitive ion channels linked preferentially to mechanical pain by preventing their fusion into the nerve terminal membrane.

— *Cephalalgia, E-pub*

### NECK PAIN LINKED TO EPISODIC MIGRAINE, THERAPEUTIC RESPONSE

Based on the assumption that neck pain is integrally related to migraine, researchers studied whether early treatment with sumatriptan 85/naproxen sodium 500 (sumatriptan/naproxen) in truly episodic migraineurs is more robust than results when neck pain has not been considered.

Results showed that 63.9 percent of patient attacks treated with sumatriptan/naproxen achieved two-hour pain freedom compared with 33.3 percent of those with placebo ( $P < 0.001$ ). Sustained pain freedom (2-24 hours) was achieved in 69.1 percent of sumatriptan/naproxen-treated attacks, compared with 23.3 percent with placebo ( $P < 0.01$ ).

Truly episodic migraineurs had significant pain freedom as soon as 15 minutes following treatment with sumatriptan/naproxen (5.2 percent vs. 0 percent with placebo;  $P < 0.01$ ).

— *Postgrad Med. 2014 Mar;126(2):86-90.*

### TRIPTAN USE MAY NOT CUT HEALTHCARE RESOURCE UTILIZATION

With \$1 billion in direct medical costs each year and another \$13 billion in indirect productivity losses, migraines are costly. Researchers sought to (a) assess changes in the utilization of medical services and relevant prescription drugs after patients suffering from episodic migraines begin triptan therapy and (b) further investigate the relationship between concomitant opioid use among triptan-treated migraine patients and further utilization of medical services and prescription drugs.

The retrospective analysis of pharmacy and medical insurance claims included 9,521 migraine patients who were followed for a median of 550 days before and after their first triptan fill. Forty patients filled their triptan prescriptions only once (index fill). Another 40 percent filled a triptan prescription at least twice and never switched their triptan brand. Another 15.6 percent of patients switched

#### BY THE NUMBERS

#### 1 in 8.

Number of visits to a doctor for a headache or migraine that ends up with the patient going for a brain scan.

#### \$1 billion.

Annual cost of those brain scans.

#### 1-3%.

Proportion of scans of patients with repeated headaches that find a growth or blood vessel problem.

#### 51.1 million.

Number of headache-related patient visits between 2007 and 2010.

#### 75%+.

Proportion of headache patients who were women.

— *University of Michigan Health:*

<https://www.uofmhealth.org/news/archive/201403/us-headache-sufferers-get-1-billion-worth-brain-scans-each>

### ABOUT MIGRAINE

According to the American Headache Society, The American Migraine Prevalence and Prevention (AMPP) Study has revealed:

1. Migraine occurs in about 12% of people aged 12 and older in the United States (17% of women and 6% of men). It is about three times more common in women than men. It is most common in midlife, and rates decrease after age 60.
2. Almost 1% of people in the US experience chronic migraine, which equals 1.5 million women and more than half a million men in the United States who experience migraine more days than not, some of whom live with migraine every day.
3. Depression and anxiety are about twice as common in people who have migraine compared with those who do not. And even more common in people with chronic migraine.
4. Almost half of people with episodic migraine have nausea with their headaches half the time or more.
5. Almost 20% of people in the AMPP database have tried opioids for headache management, but it is associated with many problems.

their triptan prescriptions once, and 3.2 percent of patients switched their triptan prescriptions twice or more.

The cohort that never refilled the medication was the only group with significant reductions in utilization, potentially suggestive of misdiagnosis. Either no significant change or a significant increase in resource utilization was seen in all other cases.

Reduction of resource utilization seemed to be lower among patients who switched triptans more often. Patients that concomitantly used opioid medications in addition to triptans also used significantly more resources than did migraine patients who were not treated with opioids.

— *J Manag Care Pharm.* 2014 Apr;20(4):368-75.

### FENUGREEK SEED IMPROVES SYSTEMIC SYMPTOMS OF DYSMENORRHEA

Among a group of unmarried students randomly assigned to two groups to receive fenugreek (n=51) or placebo (n=50), researchers assessed pain severity using a visual analog scale and systemic symptoms using a multidimensional verbal scale.

Pain severity was significantly reduced in both groups after the intervention; however, the fenugreek group experienced significantly larger pain reduction. In the fenugreek

group, the duration of pain decreased between the two cycles. Systemic symptoms of dysmenorrhea (fatigue, headache, nausea, vomiting, lack of energy, syncope) decreased in the fenugreek seed group.

— *J Reprod Infertil.* 2014 Jan;15(1):41-8.

### HIGH RATES OF ANXIETY DISORDER ASSOCIATED WITH HEADACHES

Roughly two-thirds (67 percent) of patients with headache have panic disorder, a new study suggests. Those with daily headache and panic disorder (with or without agoraphobia) showed higher Hamilton Anxiety Rating Scale (HAM-A) score and poorer quality of life than those with intermittent headache and without panic disorder, respectively. Findings come from a single-centre, cross-sectional, observational, questionnaire-based study performed at the psychiatry outpatient department of a tertiary care hospital. Participants of both genders, aged between 18 and 60 years, and having headache as a presenting complaint for at least three months were evaluated for symptoms of panic disorder.

— *East Asian Arch Psychiatry.* 2014 Mar;24(1):10-5.

### NDA FOR NASAL DELIVERY THERAPY SUBMITTED TO FDA

FDA has accepted the New Drug Application (NDA) for AVP-825 (OptiNose/Avanir), a closed-palate Breath Powered investigational drug-device combination product for the acute treatment of migraine using low-dose sumatriptan. The NDA for AVP-825 includes clinical data, including a pivotal phase III controlled clinical trial, a supportive phase II controlled clinical trial and two pharmacokinetic studies. According to OptiNose, the closed-palate Breath Powered delivery technology uses the natural function of a user's breath to propel medications beyond the nasal valve into the deep, targeted areas of the nasal cavity more effectively and efficiently than current treatment approaches.

### MIGRAINE RESEARCH TAKES TO TWITTER

From a total of 21,741 migraine tweets collected, researchers evaluated 14,028 tweets reporting migraine headache attacks in real-time. The gender distribution for migraine posts was 73.47 percent female, 17.40 percent males, and 0.01 percent transgendered. The personal impact of migraine headache was immediate on mood (43.91 percent), productivity at work (3.46 percent), social life (3.45 percent), and school (2.78 percent). The most common migraine descriptor was "Worst" (14.59 percent). The majority of postings occurred in the United States (58.28 percent), peaking on weekdays at 10:00h and then gradually again at 22:00h. ■

— *J Med Internet Res* 2014;16(4):e96