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AMERICAN HEADACHE SOCIETY
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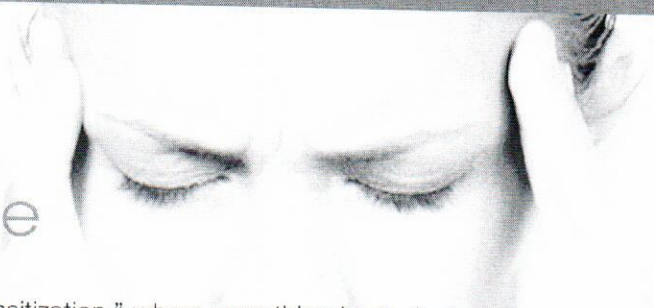
Headache Toolbox

Nasal Sprays for the Treatment of Migraine



Nasal sprays can provide relief to migraine patients in as soon as 15 minutes, and are especially useful with nausea and vomiting, or in those who seek to avoid an injection. They are sprayed into the nostril with the head upright. Vigorous sniffing or tipping the head backward puts the medicine down the throat, turning a spray into an oral medication and losing advantages of rapid nasal delivery.

There are several categories of nasal spray treatment. Nasal triptans (sumatriptan and zolmitriptan) and dihydroergotamine (DHE), contain migraine-specific treatment. Triptans and DHE are highly effective but do cause blood vessel narrowing and should not be used in people with known or suspected vascular disease. A third nasal option is a non-steroidal anti-inflammatory (NSAID) spray, nasal ketorolac, containing medicine targeting migraine inflammation.

Many patients have an oral acute treatment for slower onset mild-moderate migraines without vomiting, and a nasal formulation for faster wake-up, throw-up, or more severe migraines. With this plan, one must be careful to choose oral treatment compatible with the nasal spray. Different triptan types cannot be safely mixed, and triptans and DHE also cannot be combined.

An anti-inflammatory nasal spray, tablet, or liquid can be mixed with either oral or injectable triptans, or with DHE. This combination of triptan or DHE plus NSAID may improve the benefits of both drugs, reversing inflammation and blood vessel dilation. This may prevent recurrence.

Nasal DHE or NSAID migraine treatment sometimes works even late in a migraine. Triptans may be less effective when a patient wakes up with a migraine progressed to "central sensitization," where everything hurts, including light, noise, touch, and smells. As many as 40% of patients do not respond to triptans, and nasal DHE or nasal ketorolac may be quite helpful.

Both nasal DHE and nasal ketorolac can be used for "rescue," when a migraine has progressed out of control after several days of usual treatment and may spare you infusion therapy, steroids, or repeated injections. The non-narcotic sprays discussed are not habit forming, don't cause drowsiness, and don't cause the jitteriness and increased risk of bone loss associated with steroids.

TRIPTAN NASAL SPRAYS

A single spray of nasal sumatriptan (IMITREX) or zolmitriptan (ZOMIG) can work as early as 15 minutes compared to 6 minutes with injection or about 30 minutes with oral tablets. Liquid diclofenac also has onset at 15 minutes, but can be vomited. Nasal triptans can be useful for adolescents who vomit, as injections may be unacceptable for this age-group.

Nasal sumatriptan is approved for use in adolescents in Europe, but does not have US FDA approval for teens. Nasal sumatriptan is particularly unpleasant tasting, so special counseling must be done to avoid sniffing and swallowing. Nasal zolmitriptan is not approved for adolescent use by regulatory authorities.

Because of more acceptable taste, nasal zolmitriptan is often the nasal triptan of choice for patients with episodic migraine with quick onset or vomiting.

NASAL DHE

Nasal DHE (Migranal, Valeant Pharmaceuticals International, Aliso Viejo, CA, USA) is

administered with 1 spray both nostrils, repeated in 15 minutes (4 sprays = one dose) Onset is slower than a triptan, but it can be used late in migraine, to prevent recurrence, and to help a patient out of rebound or medication overuse headache. Nasal DHE should not be used within 24 hours of a triptan.

NASAL KETOROLAC

Nasal ketorolac (Sprix, Regency Therapeutics, Shirley, NY, USA) is the only nasal NSAID currently marketed, and is FDA approved for moderate to severe pain. It can be used alone or combined with triptan/DHE to boost its benefits when treating tough migraine. Nasal ketorolac may also be used as rescue, and is approved for up to 5 days for acute pain. Ketorolac comes in both tablet and injectable (Toradol, Hospira, Inc., Lake Forest, IL, USA), and is frequently used in ERs and offices to break difficult migraines.

Prescribing information for all NSAIDs warns against use in patients with known or suspected coronary artery disease, and nasal ketorolac is no exception. Unlike triptans and DHE, NSAIDs cause no blood vessel narrowing, but can still increase risk of heart attack and stroke. Nasal ketorolac should not be mixed with other NSAIDS such as ibuprofen, diclofenac, or naproxen on the same day.

SUMMARY

If you vomit with migraines, get full-blown migraines upon awakening, or want rapid relief without injections, consider a nasal spray. Options include triptans (zolmitriptan [Zomig] or sumatriptan [Imitrex]), DHE (Migranal), or an NSAID (Sprix).

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INFORMATION FOR
HEALTH CARE PROFESSIONALS

AMERICAN HEADACHE SOCIETY

Peripheral Nerve Blocks for Headaches

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Background

Peripheral nerve blocks (PNBs) have been employed in the treatment of a variety of headache disorders for many years. Injections to peripheral trigeminal and cervical nerve branches may provide prompt and definitive relief of acute head pain for days, weeks, or even months. There are few contraindications to PNBs; they are safe, well-tolerated, and drug interactions are of little concern, rendering this therapy very useful for both patients and practitioners.

Mechanism of Action

PNBs involve injections of local anesthetic agents around peripheral nerve branches. PNBs typically provide pain relief that far outlasts their anesthetic effect. The prolonged analgesia after PNB may be due to effects on central pain modulation. This hypothesis is supported by observations that associated symptoms such as photophobia may be reduced after PNBs, and cutaneous allodynia may also be reduced in dermatomes far beyond the distribution of the injected nerve. In addition, a single greater occipital nerve injection (a C2 nerve branch) is extremely effective in aborting an attack period in cluster headache, which is essentially a trigeminal-mediated cephalalgia, demonstrating that the effect of a PNB is far more complex than simply anesthetizing a local nerve branch.

Indications

PNBs may treat a variety of headache disorders and have varying indications. The most common indications include:

1. Treating an acute migraine attack or status migrainosus for rescue purposes
2. Rapidly suppressing an attack period in cluster headache
3. Weaning patients with medication overuse off of acute analgesics while prophylactic medications are initiated or escalated
4. Repeating PNBs periodically in the treatment of chronic daily headache (CDH)

Technique

There was no standardized approach for the performance of PNBs until a consensus statement had been reached in 2012 by the Peripheral Nerve Blocks and Other Interventional Procedures for Headache and Face Pain section of the American Headache Society, where the procedural details are more described in depth.

Injection sites. The most widely used target for PNBs is the greater occipital nerve (GON). Other commonly targeted nerves are the lesser occipital nerve (LON) and several branches of the trigeminal nerve: the supratrochlear (STN), supraorbital (SON) and auriculotemporal (ATN) nerves.

Agents. The local anesthetics lidocaine and bupivacaine are most frequently used, occasionally with the addition of a corticosteroid such as methylprednisolone, dexamethasone, or triamcinolone during GON blocks only. The evidence for the use of corticosteroids in PNBs is strongest for cluster headache.

Frequency. The indication for treatment determines the frequency of PNB. Re-treatment with PNB would likely be unnecessary if prompt relief is experienced after treating status migrainosus. However, for transitional care when weaning from analgesic overuse, re-treatment in 2-4 weeks may be necessary. In patients receiving PNBs for treatment of CDH, longer treatment intervals, of one month or more, may be sufficient. For patients who require repeated injections, the recommended frequency of treatments is once every 2-4 weeks, depending on the individual patient's response. If steroids are administered on a repeated basis, injections should be performed less frequently, usually at 3 month or longer intervals, to avoid systemic adverse effects. However, this interval may be shorter for patients with CH.

Adverse Effects and Safety

Adverse effects (AEs) of PNBs are usually mild, predictable, and not serious. Most patients experience cephalic numbness. There are occasionally paresthesias in the sensory distribution of the injected nerve branches. Localized symptoms such as pain or hematoma may occur. Dizziness or blood pressure alterations may occur uncommonly, but are transient. Allergic reactions to local anesthetics have been described but are rare.

Corticosteroid injection may be associated with both local and systemic AEs, such as alopecia, cutaneous atrophy, hyperpigmentation, and Cushing syndrome, especially with frequent injections at high doses.

Evidence

The evidence for the use of PNBs in the treatment of headache disorders is best for cluster headache, where there are 2 double-blind, placebo-controlled studies supporting efficacy and safety for occipital nerve blocks. For other headache disorders including migraine and chronic daily headache, multiple retrospective and prospective studies exist, and successful randomized controlled studies have been undertaken for chronic daily headache and cervicogenic headache.

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