Botulinum toxin injection may help prevent some types of migraine pain

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A preliminary study suggests the same type of botulinum injection used for cosmetic purposes may be associated with reduced frequency of migraine headaches that are described as crushing, vicelike or eye-popping (ocular), but not pain that is experienced as a buildup of pressure inside the head, according to a report in the February issue of *Archives of Dermatology*.

Migraine headaches affect approximately 28 million Americans, causing pain that is often debilitating, according to background information in the article. Researchers conducting clinical trials on botulinum toxin type A to treat facial lines recognized a correlation between injections and the alleviation of migraine symptoms. "The initial promise of a new prophylactic [preventive] therapy for migraines was met by the challenge of replication of these results," as subsequent studies have failed to demonstrate botulinum was more effective than placebo, the authors write. "Researchers have searched for patient characteristics that may predict a favorable treatment response."

Christine C. Kim, M.D., then of SkinCare Physicians, Chestnut Hill, Mass., and now in private practice in Encino, Calif., and colleagues studied 18 patients (average age 50.9) who had already received or were planning to receive botulinum injections for cosmetic purposes but also reported having migraines. Of those, 10 reported imploding headaches—described by adjectives like crushing and vice-like—or ocular headaches, reported to feel like an eye is popping out or that someone is pushing a finger into an eye. Nine patients had exploding

headaches, described as feeling like one's head is going to explode or split, or that pressure is building up. Some patients had more than one type.

Three months after treatment, 13 patients had responded to the treatment with a reduction in migraine pain, including 10 who had imploding or ocular headaches and three who had exploding headaches. All six of the patients who did not respond had exploding headaches.

Among all participants who responded to treatment, migraine frequency was reduced from an average of 6.8 days per month to an average of 0.7 days per month. Patients with exploding headaches experienced an average reduction in migraine frequency of 11.4 to 9.4 days per month, whereas frequency in participants with imploding or ocular headaches reduced from an average of 7.1 days per month to 0.6 days per month.

Botulinum produces muscle paralysis, but this alone does not explain how it may prevent migraine pain, the authors note. Research indicates that it may affect the way pain signals travel through the nervous system, block pain receptors or reduce inflammation.

"These preliminary data are intriguing, and our results provide support for the hypothesis that patients with migraine that is characterized by imploding and ocular headaches are more responsive to botulinum toxin type A than those with migraine characterized by exploding headaches," the authors write. "Our findings invite consideration of using botulinum toxin type A injections to prevent migraine headaches and may promote the role of the dermatologist in the treatment of patients with migraine. However, well-controlled trials need to be conducted to confirm these findings."

More information: Arch Dermatol. 2010;146[2]:159-163.

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