

Botox injections associated with only modest benefit for chronic migraine and daily headaches

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Although botulinum toxin A ("Botox") injections are U.S. Food and Drug Administration approved for preventive treatment for chronic migraines, a review and analysis of previous studies finds a small to modest benefit for patients with chronic migraine headaches and chronic daily headaches, although botox injections were not associated with greater benefit than placebo for preventing episodic migraine or chronic tension-type headaches, according to an article in the April 25 issue of *JAMA*.

"Migraine and tension-type headaches are common. Although up to 42 percent of adults experience tension-type headaches sometime in their life, most do not seek medical advice. Migraines are less common, with a worldwide prevalence between 8 percent and 18 percent, but are associated with greater disability. [Migraine headaches](#) are responsible for \$1 billion in medical costs and \$16 billion in lost productivity per year in the United States alone," according to background information in the article. [Botulinum toxin A](#) injections were first proposed as headache treatment when it was observed that patients with chronic headaches receiving cosmetic botulinum injections experienced headache improvement, prompting several case series that suggested benefit. However, the [medical literature](#) on botulinum effectiveness for headaches has been mixed.

Jeffrey L. Jackson, M.D., M.P.H., of the Medical College of Wisconsin, Milwaukee, and colleagues performed a review and meta-analysis to assess the association of botulinum [toxin A](#) with reducing headache frequency when used for [preventive treatment](#) of migraine, tension, or chronic daily headaches in adults. For the study, headaches were categorized as episodic (less than 15 headaches per month) or chronic (15 or more

headaches per month) migraine and episodic or chronic daily or tension headaches. The researchers identified 27 randomized placebo-controlled trials that included 5,313 [study participants](#) and 4 randomized comparisons with other medications that met study inclusion criteria.

Pooled analyses of the data suggested that botulinum toxin A was associated with fewer headaches per month among patients with chronic daily headaches (1,115 patients, -2.06 headaches per month) and among patients with [chronic migraine](#) headaches (1,508 patients, -2.30 headaches per month). There was no significant association between use of botulinum toxin A and reduction in the number of episodic migraine (1,838 patients, 0.05 headaches per month) or chronic tension-type headaches (675 patients, -1.43 headaches per month).

Compared with placebo, botulinum toxin A was associated with a greater frequency of blepharoptosis (drooping of the upper eyelid), skin tightness, paresthesias (a prickly, tingling sensation), neck stiffness, muscle weakness, and neck pain.

In the 4 trials that compared botulinum toxin A with other treatment modalities, botulinum toxin A was not associated with reduction in headache frequency compared with topiramate (1.4 headaches per month) or amitriptyline (2.1 headaches per month) for prophylaxis against chronic migraine headaches. "Botulinum toxin A was not associated with a reduction in headache frequency vs. valproate in a study of patients with chronic and episodic migraines (0.84 headaches per month) or in a study of patients with episodic migraines (0.3 headaches per month). Botulinum toxin A was associated with a greater reduction in average headache severity than

methylprednisolone in a single trial among patients experiencing chronic tension-type headaches (-2.5 headaches per month)," the authors write.

"Our analyses suggest that botulinum toxin A may be associated with improvement in the frequency of chronic migraine and chronic daily headaches, but not with improvement in the frequency of episodic migraine, chronic tension-type headaches, or episodic tension-type headaches. However, the association of botulinum toxin A with clinical benefit was small. Botulinum toxin A was associated with a reduction in the number of headaches per month from 19.5 to 17.2 for chronic migraine and from 17.5 to 15.4 for chronic daily [headaches](#)."

More information: JAMA.
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