Episode 226: OnabotulinumtoxinA for Migraine: What You Need to Know

Lindsay Weitzel, PhD:
Hello and welcome to HeadWise, the videocast and podcast of the National Headache Foundation. I'm Dr. Lindsay Weitzel. I'm the founder of Migraine Nation, and I have a history of chronic and daily migraine that began at the age of four. I'm excited to be here today with repeat guest and headache medicine specialist Dr. Fred Cohen. Hello, Dr. Cohen, how are you?

Fred Cohen, MD:
Hello. Thank you for having me again.

Lindsay Weitzel, PhD:
Thank you for being here. Dr. Cohen is an assistant professor at the Icahn School of Medicine at Mount Sinai, and he's also the founder and director of Headache Intervention, a private practice headache clinic located in New York City. Our episode today is on onabotA, also known as Botox. We plan to cover some of the questions that you often don't hear answers to, so stick around. We have a lot to say.

Dr. Cohen, I'd like to start with why onabotA (Botox) works for chronic migraine. I think for a long time, many of us thought it mostly had to do with the muscle paralysis or relaxation that occurs in the muscles. But we're finding that there is more to it than that. Can you please explain?

Fred Cohen, MD:
Sure. So most people know onabotA (Botox) for its cosmetic purposes. You probably have a friend or you know a family member who get it for their wrinkles or whatnot. So many people think, oh, it deals specifically with muscle tension and tenderness, but it's a bit more deeper than that. In a nutshell, what Botox does is it's a neurotoxin, but it's a neurotoxin we're being specific with, we're directing where to go. What it does is it goes into neurons, the nerves, and doesn't allow certain signals to be transmitted. One of those deals with muscle contractions. And that's why muscles flatten out and wrinkles go away.

But they also affect the pain signals such as CGRP, calcitonin gene-related peptide, which is the substance that we've talked about a lot on this series, which is related to the whole migraine cycle, substance P, which is the pain signal and other signals at nerve endings. And by doing that combination, in addition to the muscle tension, that is the mechanism we believe in how it helps reduce monthly migraine and headache frequency.

Lindsay Weitzel, PhD:
How effective is onabotA for chronic migraine? Does it work well for us?

Fred Cohen, MD:
So it's pretty effective. OnabotA got FDA approval about 15 years ago in 2010. And there's been many studies and real-world data since the clinical trials then. So on average from the clinical trials, we know there was an average around 8 to 9 monthly headache days in those who received it.

And then the long-term real-world data and studies show more than a 10 monthly headache day reduction. Now, something I do want to point out, that this is specifically an FDA approved treatment for those with chronic migraine. The definition of chronic migraine is those who have 15 or more headache days a month, 8 of which are migraine attacks.

And also, there are many different treatments for headache and migraine, and that onabotA (Botox) is effective for many, but it might not be the treatment for you. This is always a discussion with your provider. I don't, of course, want to cast biases that this is one treatment route for all, but this is a very effective treatment.

Lindsay Weitzel, PhD:
For a period of time after the CGRP monoclonal antibodies came out, there was a bit of controversy about whether people on these medications should be getting onabotA (Botox) for migraine. But now because they were working on similar pathways, and now we're seeing publications that these two types of medications may actually have a synergistic effect or work together to help combat chronic migraine. What are your thoughts on this?

Fred Cohen, MD:
This is a bit of my controversy, and I guess a great question to ask me. So I'll tell it in a story, where when I was a wee little resident back at Montefiore in training was when the mAbs came out, Aimovig, Emgality, Ajovy. And I would be doing my electives at the Montefiore Headache Center, and I would see patients that they would want to start on these CGRP drugs, but insurance was like, no, no, no.

And it was more of a cost issue. These were new things. Oh, we don't know what they are together. Because I asked Dr. Richard Lipton and Sarah Vollbracht and Cynthia Armand, who were my mentors when I was in training, oh, well, why can't we do both? Oh, insurers won't accept it because there's no evidence. So I go, alright, why don't we get the evidence?

So, this was my first research project in headache medicine that myself, Sara Vollbracht, Cynthia Armand and Richard Lipton, we looked at patients who were receiving both. We had 153 patients, and we saw that the vast majority of them did improve on receiving both treatments, that they actually had further monthly headache day reduction. So patients started on Botox, and then they needed further treatment.

They started on a mAb, and they had a further statistical significant reduction in monthly headache days. So we were one of the first papers that showed this, and our paper was used by a lot of practices to get authorization to get both. So I'm happy I was able to make, that was sort of the waves I started making in the headache world.

So there is evidence that both of these do work together, because both, the thought behind it is they both work on CGRP, but from different mechanisms. So think of it like a two-prong attack. So you have CGRP, right? The monoclonal antibodies are affecting CGRP one way, and Botox is affecting it in a different way to a greater effect.

And a little side story I like to tell, when I was writing this paper, in the draft of the manuscript, I actually had a paragraph about the actual statistics on how many times people, their insurance, denied them. And I was pretty, verbal on my approach about insurance. And Richard was like, listen, you're a junior physician. I would start making enemies really fast. And I was ready for it. I was like, okay, so we excluded that from the final draft. But now it's very common for a lot of patients, and I'm happy to say that that's the case now that they could get both treatments without too much difficulty from their insurance.

Lindsay Weitzel, PhD:
It's good to know and I'm glad that we have that data now. And thank you for that. Can you tell us how Botox that is used for cosmetic purposes in the procedure for cosmetic purposes etc., is different from onabotA for chronic migraine?

Fred Cohen, MD:
Sure. So, it's all onabotulinumtoxinA in the end. Now there are different kind of botulinum toxins. There's A through F. OnabotulinumtoxinA (Botox) is the common one we hear. There's other brands like Dysport, which is another kind of botulinum toxin. Only onabotulinumtoxinA has the clinical data (FDA approval) thus far for the treatment of chronic migraine, so that's why this is the one we're specifically talking about.

The injections are similar, so I'm going to use my friend here. We're going to call him little Fred. So, injections are a bit similar. So this is, let me not stick myself, this is what a syringe we would use to get onabotA out of. And onabotA (Botox) comes in a vial like this. We draw it up, what's called reconstitution. We get it all set up and we will fill four syringes of this. And then we would inject. And you could tell very tiny needle, very small syringe.

So when you get cosmetic Botox, it's usually in the forehead region by your eyebrows, crow’s feet on the side, maybe below it. And it is similar with Botox for chronic migraine. So there's a protocol we follow. It's called the PREEMPT protocol, and this is what was established from the clinical trials. And this is a protocol that we follow to today which is 31 injections, 155 units. And they are essentially three between your eyebrows, four over the forehead. Then there's also on the side, four on this side. And this is symmetrical by the way. So everything I'm pointing out is on both sides, right? We also go into, this is how it differs again from cosmetic, that we're dealing with the side, we go to the back of the head in your occipital region, your paracervical region, and even your trapezius. Cosmetic is only dealing really with the forehead, where we're doing a whole-head approach.

Lindsay Weitzel, PhD:
Does everyone get the exact same injection protocol or do some people get different injections depending on where their pain is.

Fred Cohen, MD:
So sort of. So as I was just saying, there's the PREEMPT protocol: 31 injections, 155 units. But this vial has 200 units in it. So meaning we have the option of 45 [units] or 9 additional injections. So we have what we call follow the pain. So, for example, let's say someone says they have a lot of pain behind their eyes. I could do injections in this region. Let's say someone says oh my pain is really frontal. I could do an infraorbital injection. Oh it's worse in the back of my head—I can adjust it based on the symptoms and presentation of the patient. We don't have to. It's not like some patients go, oh, we have to use it all. You don't have to use it all. It's case by case.

Pain can sometimes change. We're morphing your pain sensitivity of your head. So it's common that when I see a patient, I say, hey, what's different with your migraine? And they'll say, oh yeah, it's worse in this area or better. And we adjust. That's the sort of beauty of that additional 9, that it's sort of customizable to each patient's individual needs.

Lindsay Weitzel, PhD:
If someone out there, I think this is an important question because I hear this all the time, gets Botox (onabotA) for cosmetic purposes, can they also get it for migraine and vice versa?

Fred Cohen, MD:
So, I'll start that with that's actually how they figured out Botox for chronic migraine back in the early 2000s. It was actually a couple of groups, one where I did my training at Jefferson. Dr. Silberstein, they were hearing from patients who were getting facial Botox and then saying, oh my migraines have improved. And that's what sort of kickstarted this whole idea and study.

The first studies for onabotA for migraine were only the forehead, 25 to 75 units only in the forehead. They then expanded to the entire head. So if someone out there is doing it for cosmetic purposes, again they need to meet the requirement for Botox for chronic migraine, which again, 15 headache days a month, 8 of which are migraine.

That is the FDA approval. If someone meets that headache criteria and they get insurance authorization, then we would do Botox, where most of my patients like we are injecting the forehead. So yes, it does do for the most part, the cosmetic effect, which is I call it a neat little side effect. Generally, I don't, I mean, again, every patient is different with their own needs. Some of my patients are getting additional cosmetic injections elsewhere. Some are no longer pursuing to get cosmetic because they're essentially getting that effect from what we're doing.

It is important that if you are getting additional facial Botox to disclose that to your headache provider because you don't want too much Botox. The side effect of Botox, or when it goes wrong, if you will, is when it goes to an area we don't like. So, I was saying we have the protocol, right? So, let's say you have too much Botox. It could cause an eyelid droop, a facial droop. No one wants that of course. So, I always ask a patient are you also getting cosmetic because we don't ever want to inject too much.

Lindsay Weitzel, PhD:
Is there a danger of developing antibodies if we are getting it too often? In other words, if we got it for cosmetic purposes, do we have to wait three months to get it for migraine?

Fred Cohen, MD:
I would say it's because it's not generally, how do I want to say, it's absorbed through the entire body. So developing antibodies to, is not too much of a concern. It's more of where are you getting injected. For instance, as I was describing, we have our protocol. So, if you're getting from me and someone else within that three-month injecting the same area, it's going to alter your facial appearance to a negative way. So that's why it's important for you to disclose if you're getting Botox for other purposes.

Lindsay Weitzel, PhD:
Is onabotA approved for children with chronic migraine?

Fred Cohen, MD:
Unfortunately, to my knowledge, it is not. *(NHF note: as of 7/1/2025 it is only approved 18 years +)*

Lindsay Weitzel, PhD:
People always want to know, how painful are the injections?

Fred Cohen, MD:
So I will disclose, I don't mind talking about I am a migraine sufferer. I do always say do not trust a headache doctor who doesn't get headache. And I have for my treatment of migraine in the past gotten Botox injections for my chronic migraine. And so I know what it feels like.

So I want to try to show this well. That's the needle, and next to it is my thumb. I'll show my pinky. It's a very, very tiny needle. How do I describe it? I'll say it like this. When you get your blood taken or a vaccine, that hurts more because that's a bigger needle than this.

It's just 31 times, which is a good amount. It's not fun getting injected, but it doesn't take long. It's a pretty quick process. And I don't have many patients that discontinue getting onabotA for migraine because it's too painful. I wouldn't say it's enjoyable, but most my patients I think would agree that it's worth the sort of five-minute pincushion session for the improvement in their headache frequency.

Lindsay Weitzel, PhD:
And then my last question is, does it alter the way your face looks or your head or your jaw or anything like that?

Fred Cohen, MD:
So, this is a concern I get from a lot of patients starting it. We know Botox could be used for cosmetic purposes and facial alteration. So, they're very concerned, what is it going to do to my appearance. Short answer is, yes it can. And this is what I describe the difference between a good injector and a bad injector.

I did have official training through Allergan, the company who makes onabotA (Botox). And part of that training is recognizing when there's going to be facial changes. The most common facial alteration through Botox to chronic migraine is something we, the colloquial term is Spock eye, which is the lateral raising of your eyebrows. Think of the character Spock from Star Trek.

So that is the most common thing that can happen. But what a good injector will do is, as patients are getting, when they come in for Botox, I always tell them, close your eyes, raise your eyebrows. Because I'm looking for those subtle changes. And when I start noticing the subtle changes, I start adapting. If I see someone's lateral eyebrow begin to raise, I widen out how we inject it to combat that. So sometimes we do alter our injection sites to prevent unwanted facial alterations.

Lindsay Weitzel, PhD:
Is there anything else you'd like to add on this discussion before we go.

Fred Cohen, MD:
That Botox, it's a very effective treatment, FDA approval for 15 years. I also again want to highlight there are various treatments for migraine. This is a treatment that many do. But again, it doesn't mean it's the only one. Of course, have a discussion with your headache medicine provider to determine what's best for you.

Lindsay Weitzel, PhD:
All right. Well, thank you so much for being here with us today. And thank you, everyone for joining us on this episode of HeadWise. Please join us again on our next episode. Bye bye.