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Neuromodulator Dosing for the Upper Face

Announcer:

Welcome to CME on ReachMD. This activity, entitled "Neuromodulator Dosing for the Upper Face," is provided by Prova Education and is supported by an independent educational grant from Galderma. Before starting this activity, please be sure to review the disclosure statements as well as the Learning Objectives.

Here's Dr. Joel Cohen.

Dr. Cohen:

It's important for physicians to understand that there are different currently available neuromodulators that we can use in the upper face, so we're going to be discussing these products today.

This is CME on ReachMD, and I'm Dr. Joel Cohen, a dermatologic surgeon from Denver, Colorado.

Dr. Bloom:

And I'm Jason Bloom. I'm a facial plastic surgeon in the Bryn Mawr, Pennsylvania, area.

Dr. Cohen:

So let's dive right in. Dr. Bloom, can you take us through some of the currently available neuromodulators and how you use them in the upper face?

Dr. Bloom:

We do have some currently available neuromodulators on the market. The first would be onabotulinumtoxinA, commonly known as Botox Cosmetic. We have abobotulinumtoxinA, known as Dysport; incobotulinumtoxinA, known as Xeomin; and most recently, we have prabotulinumtoxinA, known as Jeuveau. When we talk about the on-label indications in the upper face, every one of these neuromodulators is actually approved for the glabella area in between the eyes, whether it's the procerus to get the horizontal lines or the corrugator to get the vertical lines in between the brows. But only onabotulinumtoxinA has other indications currently at this point in the upper face. So onabotulinumtoxinA also is approved for the frontalis or the forehead, as well as the lateral canthal lines or the crow's feet. The rest of the neuromodulators that I just talked about that are commonly available are used in these other areas – as I commonly use them in my practice – but they are considered off-label because they haven't gone through FDA approval for those specific indications.

Dr. Cohen:

Give us some guidance in terms of how you're actually deciding which areas to treat in which patients. So if I look at a patient and they have a significant forehead musculature with animation, I look at the positioning of their brows, and I might say, "Well, I'm going to dose their forehead, but I'm also going to really think about the fact that that is going to reposition their brows down, and I'm also going to dose the glabella and crow's feet as well, especially the high crow's feet." So take us through your sort of injection algorithm to optimize results.

Dr. Bloom:

Yeah. So I think that's really important, and you have to look at the musculature of the periorbital area. And when I say that, we're talking about the glabellar musculature, the corrugators as well as the procerus, the lateral canthal area, the lateral portion of the orbicularis oculi muscle, meaning around the eye, and then the frontalis or the forehead muscle. And you have to look at it as kind of a give and take. Some of the muscles lift the brows, and actually one muscle, the forehead or frontalis muscle, is the only muscle that lifts the brow. The rest of the muscle groups, as I mentioned, the glabellar musculature as well as the lateral portion of the orbicularis, pull down on the brow.

And we know neuromodulators weaken muscles. So when I'm talking to other injectors or teaching this, I have to – and even to patients. When patients come in the office, we commonly get patients asking, "Well, can't you just put something up here to lift my brows?" And I say, "It's actually the exact opposite." In order to lift a brow or raise it up and open the eyes a little bit, we want to weaken the muscles that pull down – whether it's the glabella, the lateral canthal area, meaning the lateral portion of the orbicularis – and we want the forehead or the frontalis muscle to lift and help open up the eyes and lift the brows. However, I like to modulate the amount of lift that we're given in the brows based on, again, how strong the muscle is to kind of weaken it so that we're not lifting too much and peaking the brow or causing something that's overexaggerated where the brows are too severely elevated.

Dr. Cohen:

So I have the same conversation with patients every day, and I think it's really helpful to actually show the musculature to a patient because people have that misperception about the forehead.

So, Jason, when we're thinking about which botulinum toxin agent we're going to use, we also think about dose, we think about reconstitution, and our own little preferences in terms of what needle and what syringe we like to do. Tell us about some of your preferences.

Dr. Bloom:

Let's talk about dose a little bit. So we have some guidance, some guidelines based on the FDA registration trials. So on-label, for example, the glabella, and these are the muscles in between the eyes, we have onabotulinumtoxinA or Botox Cosmetic. The on-label indication for this area is 20 units. That is the same for Jeuveau or prabotulinumtoxinA and for incobotulinumtoxinA or Xeomin. They all have an on-label, 20-unit dose in the glabellar area. Dysport or abobotulinumtoxinA has a 50-unit, on-label dose in the glabella. So when you think about it, 20 units of one to 50 units of the other, it's never a 1:1 ratio. There's about 2.5 units of one of those neuromodulators to every 1 unit of Dysport. And that's based on the FDA dosing. Additionally, as I said, there is only one of those neuromodulators that is approved in other areas of the upper face. So onabotulinumtoxinA has an approval for also 20 units in the forehead as well as 12 units around each of the lateral canthal areas. Now, the dosing in these areas really depends on the muscle strength.

Dr. Cohen:

So when it comes to reconstitution for the different neuromodulators, these come obviously as a powder, and then when you reconstitute it – I reconstitute with preserved saline so it's less painful; Murad Alam did a study on that a number of years ago. And I like to take the rubber stopper off and use a B&D needle. I like to use the short hub so that I really can withdraw and have very little waste at the end of it or if a drip happens, very little waste. What's your approach to reconstitution, and how do you do this for your neuromodulator treatments?

Dr. Bloom:

I'm very much the same way that you do it. So on-label for all of these neuromodulators is preservative-free saline, but as you said, the preserved saline has a preservative which is benzyl alcohol which acts as kind of a local anesthetic just before the injections, so I also like to use preserved saline. I use the same needles that you are talking about, these small insulin swaged-on needles, the 31-gauge, and it's a 0.3 mL needle. I reconstitute abobotulinumtoxin differently than I reconstitute all the other neuromodulators that are available. So incobotulinumtoxin, onabotulinumtoxin, and prabotulinumtoxin, I like to use a 2-cc reconstitution for the 100-unit vials. And when I'm using these, the insulin syringes that we're talking about, every 0.1 cc is 5 units, so that's how I do those 3 neuromodulators. The only one I do differently in my office is abobotulinumtoxinA. And I like to use 1.5 cc of the preserved saline, and because when I'm using these small needles, every 0.05 cc is 10 units, so it's very easy because the actual syringes are marked out every 0.05 cc, and then I know that each of those small little markings is 10 units.

Dr. Cohen:

For those just tuning in, you're listening to CME on ReachMD. I'm Dr. Joel Cohen from Denver, Colorado, and here with me today is Dr. Jason Bloom from Philadelphia, Pennsylvania. We're discussing the importance of neuromodulator selection, accurate dosing, and optimizing your treatments for the glabella and upper face.

Now that we've heard how to develop a comprehensive aesthetic plan, let's see things in action. Here's a live demonstration of Dr.

Bloom taking us through this process while describing optimal injection techniques.

[Dr Bloom's video demo plays.]

Dr Cohen:

Jason, thanks so much for that great demonstration. As with all comprehensive plans, we must also factor in the chance of adverse events. What do we need to look for, and what strategies can we use to minimize our patients' risks? In essence, talk us through some of your pearls and pitfalls when using neuromodulator treatments.

Dr. Bloom:

Yeah, I think this is really important because with every good outcome that we get, we have to make sure that we're preventing any adverse events or potential untoward complications or outcomes. So first of all, when I'm talking to a patient about these kind of treatments, we go through the list of things that could potentially happen – and certainly a first-time neuromodulator patient – and I say, "Some of the biggest risks are anything that can happen if we put a needle in your face." So bruising, swelling, things like that where, you know, in the areas where we're injecting a needle. I don't have X-ray vision where I can see underneath the surface of the skin, but certainly knowing the depth will help. So for example, when I'm injecting the lateral orbital area, the lateral canthal lines, or the crow's feet, I – like we saw in the demonstration – like to stay very, very superficial because the muscle of the orbicularis is immediately deep to the skin in that area. If you go below the muscle, then you open yourself up to getting into a vein that might lie a little bit deeper. So as you see, I'm just putting the skin onto the needle with my finger so that I'm staying very superficial in that area. That helps prevent bruising in that area. Additionally, we have a patient that is moving; we have a needle specifically around their eyes. So the way I was holding my hands, I'm always injecting away from the eye. If I am injecting the lateral canthal area, I'm always coming and injecting away from the eye, you know, in the event that a patient moved or, you know, I'm stabilizing my hand and injecting away from the eye to prevent any issues in that case.

And then I think two of the more common things that you can see is something like a brow ptosis, and there's two different kinds of ptoses. Certainly, lid ptosis is a very kind of a rare but real risk of these kind of things, using neuromodulators in the glabella and the upper face, but probably more common is something like a brow ptosis.

Dr. Cohen:

Dr. Bloom, that was a fantastic explanation and overview of your approach to using neuromodulators; I really appreciate it. For our audience, what's your one takeaway message for use of neuromodulators?

Dr. Bloom:

I think the one thing that I'll leave everyone with is when we're injecting the frontalis muscle, it is so – and it varies across the board with many different patients – and it is so sensitive to neuromodulators. And I would say my one takeaway is to really start low in this area, and if you're injecting a small amount, it's much better, then, to see the patients back in a couple weeks and add a couple more units if you need to. But if you kind of get shot out of the cannon and you put a lot of units in there at once, the patients will be more unhappy because they've got a heavy brow rather than needing a small little touchup and adding a little bit extra after.

Dr. Cohen:

And I would add that knowledge of anatomy is absolutely critical to success, and people really need to understand what lies beneath in terms of the musculature and really think about the complex interplay of these different muscles and how they work together. And as you pointed out, the yin and the yang of the muscles whereas the frontalis pulls up the eyebrows, while the corrugators and the orbicularis oculi and the procerus actually pull down the eyebrows, and that yin and yang is super important to understand.

Unfortunately, that's all the time we have today, so I want to thank you, our audience, for listening and thank you very much, Dr. Bloom, for joining me and for sharing your valuable insights. It was great speaking with you today.

Dr. Bloom:

Thanks so much for having me. It was a really great conversation, and I really look forward to the next time. Take care.

Announcer:

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