Episode 170: Women's Health: Oral Contraceptives and Migraine

Lindsay Weitzel, PhD:
Hello, everyone, and welcome to HeadWise, the videocast and podcast of the National Headache Foundation. I'm Dr. Lindsay Weitzel. I am the founder of Migraine Nation, and I have a history of chronic and daily migraine that began at the age of four. I am super excited to tell you that I am here with Dr. Hope O'Brien. Hi, Dr. O'Brien, how are you today?

Hope O'Brien, MD:
Hi, I'm well, thank you. It's great to be here with you.

Lindsay Weitzel, PhD:
Dr. O'Brien is the CEO and medical director of the Headache Center of Hope in Cincinnati. She is also a board-certified neurologist and a headache specialist and a board member of the National Headache Foundation. We have an awesome topic today. I can't wait to hear what she has to say. And I think everyone loves this topic.

What we're going to talk about today is oral contraceptives in the setting of migraine, because it's something that really affects women in the migraine community. We're going to talk about it especially in the setting of menstrually related migraine and menstrual migraine. Many listeners are aware that taking oral contraceptives as a person with migraine, especially migraine with aura, comes with a published increased risk of ischemic stroke. But this can be troublesome for those of us looking for good contraceptive options or worse that may need oral contraceptives for medical reasons.

So, we want to delve into this as much as we can. Dr. O'Brien, can you first talk to us about the risks of taking oral contraceptives for women with migraine?

Hope O'Brien, MD:
Sure, thank you, Dr. Weitzel again for having me on your program.

Lindsay Weitzel, PhD:
Thank you for being here. We're excited to have you.

Hope O'Brien, MD:
I think it's important to start with some context here. We know that migraine affects women three times more often than men. And of course, women are using contraceptives for different reasons. And as you mentioned, oftentimes for mentally related migraine. And so, there's been studies that have shown increased risk of thrombotic events, such as ischemic stroke in women with migraine. And there was a systematic review published in 2016 that showed the risk of women, particularly in those with migraine aura.

Now, in general, what we see is that women with migraine have two times the risk of stroke compared to women without migraine. And that the risk is six times greater with the use of estrogen-containing contraceptives in women with aura. Especially if they have risk factors, including hypertension, hyperlipidemia, and diabetes. Now, smoking increases the risk ninefold. So, it's important that if you have risk factors, you want to kind of consider starting an OCP. And then if you're smoking, know that that increases your risk significantly.

Now, more recently, there was a study published in 2020 that showed that patients with migraine without aura was associated with a higher risk of stroke in those who were taking contraceptive therapies. I think in general, I think it may be a topic of discussion for any woman who has migraine to talk about their potential risk factors with contraceptive medications.

Lindsay Weitzel, PhD:
You did mention in some groups people who smoke, have hypertension, diabetes, et cetera, the risk gets higher. Are there age group risks? Does the risk get better or worse as you get older?

Hope O'Brien, MD:
Great question. So, in general, as you get older, so over the age of 65, your risk of stroke increases. But the studies that we're looking at in patients with migraine are looking at women under the age of 55. So, what we're seeing is that in general, having migraine puts you at that slightly increased risk. Now, the absolute risk is very low, so less than 0.06% of stroke. However, again, as I mentioned, when you add aura, the risk is a little bit higher. And then when you add some of the risk factors, that increases exponentially.

Lindsay Weitzel, PhD:
Here's where I feel it can get complicated for women. Are oral contraceptives sometimes an effective therapy for some women who experience menstrual migraine or menstrually related migraine?

Hope O'Brien, MD:
Very good question. These are all great questions you're asking. So I will move back just a little bit and talk about pure menstrual migraine versus menstrually related migraine. The definition of pure menstrual migraine are migraine attacks in women who are menstruating that fulfill the criteria for migraine and occurring exclusively on day one, plus or minus two days, of menstruation in at least two out of three menstrual cycles. So that's the definition. And there's no other migraine occurring throughout the time.

And then mentstually related migraine are those who have pure menstrual migraine. So again, migraine occurring around menstrual cycle and also outside of that. So, the thought is that this is due to a change in estrogen levels. So there's a drop in estrogen that then triggers that migraine attack. And so by taking oral contraceptives, the thought is that you're sort of balancing the level of estrogen, not causing that drop in estrogen level, preventing menstrual related or pure menstrual migraine. And I will say that in about a third of patients taking oral contraceptives, migraine may improve, but a third of those patients, migraine doesn't change at all.

And a third of patients that actually will worsen migraine. So, the question is what category are you going to be in? Now, truth be told, there's been no studies looking at the efficacy of oral contraceptives in patients with migraine. But again, patients who are on it may notice an improvement in those symptoms.

Lindsay Weitzel, PhD:
And do those patients usually take it straight through? Or do they take the placebo pills?

Hope O'Brien, MD:
Great question. So, there is an option to do either or. So, for women who have pure menstrual migraine, so again, every time they have a drop in estrogen and there's a change in progesterone and they have worsening of migraine, they may choose to not do the placebo week in order to keep that level of estrogen high.

Now, there are women who would like to get a menstrual cycle or just from a biological standpoint, want to have those menstrual periods. And so, you can be on a low dose of estrogen in that placebo week and in order to sort of mimic the physiological level of estrogen. So there's both options. You can either go continuous or take those weekly placebos.

Lindsay Weitzel, PhD:
I think we started out with that question because it can get kind of difficult for women who might fall into that category. I think you said it was about a third of women who find this to be a helpful way to prevent their menstrually related migraine or perimenstrual migraine, yet they feel like they have been told that they could be at increased risk of stroke by taking oral contraceptives. So it's like I decreased my migraine, but then because I have migraine, I could be at increased risk of stroke.

So it's a conundrum, but I do think that we should always vocalize and talk more about and research more, because for some people, it's also a treatment for their migraine. So, I find it very interesting.

Hope O'Brien, MD:
Absolutely, and I agree. And of course, as providers, we should in no way say, absolutely not, but I think it's important that we at least talk about the risk. And again, in this population, the risk is low. But for a few of my patients, they do find that taking oral contraceptives is very helpful, as long as we're making sure that we've modified risk factors and we're using the lowest dose of estrogen possible.

Because in those studies, what we found was that in those cases that patients were developing strokes, it was in the higher doses of estrogen. So those over the 50 micrograms. And so, the recommendation typically in somebody who is thinking about starting estrogen replacement or starting OCPs is to use the lowest dose possible.

Lindsay Weitzel, PhD:
Now there is this option that people call progesterone monotherapy, meaning oral contraceptives that don't have estrogen, they only have progesterone. Does that play a role for women with migraine?

Hope O'Brien, MD:
So again, data is lacking on studies of progesterone-only contraceptives in patients with migraine. There is one international case control study showing no increased risk in cardiovascular events among healthy individuals using progesterone-only oral or injectable formulations. So again, progesterone, it's a component of the cycle and it's responsible for inhibiting the luteal phase of ovulation and menstrual bleeding. And it's believed to be protective during migraine attacks In patients who want to consider that, there's been no increased risk of stroke using progesterone-only formulations.

Lindsay Weitzel, PhD:
Are there other reasons, since we have people with migraine often have a lot of comorbidities, what other medical reasons might there be that women with migraine might need to be on oral contraceptives? I don't like people to feel alone if they're in this space. So what other reasons are there?

Hope O'Brien, MD:
Well, first of all, just know that pretty much all of my patients are on oral contraceptive medications. So, I don't want them to feel like it's an absolute no. But what we know is that patients are taken or taken in either for acne, especially a lot of my younger individuals, ovarian cysts, patients may be taking oral contraceptives for heavy menstrual bleeding or for mentally related endometriosis. And so, yeah, those are some of the reasons that I see that patients are taking it.

Lindsay Weitzel, PhD:
And do we have any idea if, because there are different formulations of estrogen over the years that have come out. Do we have any idea if the type of estrogen in a pill that you might be taking matters when it comes to stroke risk and migraine?

Hope O'Brien, MD:
Well, honestly, again, I don't think the data is out there, but what we know is that very low doses of estrogen, so 10 to 20 micrograms of the ethinyl estradiol have not been definitively associated with increased risk of stroke. So, doses above the 30 is what has been studied and associated with those increased risk. And I think now there's more alternative routes of estrogen that's being delivered.

So, you have the intravaginal formulations that can be prescribed at a lower dose, a lower stable dose of the ethinyl estradiol. There's also a new wave of contraceptives that are coming in that have more natural estrogens that promise to lower those cardiovascular risk. I think the jury is still out there on that.

Lindsay Weitzel, PhD:
I'm glad we can address it though, for some people looking into these options. So what advice, putting all this together, this is a lot of information, what advice might you have for women or teens to help them weigh this idea if they have migraine? Do you have like a pocket paragraph you give to patients having to do with oral contraceptives if they have migraine?

Hope O'Brien, MD:
Sure. So first of all, I tell them, as a neurologist and headache specialist, you don't want me prescribing your estrogen, so I leave it to my friendly gynecologist or the primary care doctor again to address that. Because again, they're probably using it for other reasons and not specifically for migraine. There are great options out there that are migraine specific that we can use that can address both pure menstrual migraine as well as mentally related migraine that we can use that don't have those risks in terms of stroke. If you are on an oral contraceptive medication, if a headache does develop while using it, then that may be an indication why to maybe avoid it.

Again, there's a third chance that the OCP may worsen your migraine. So again, speak to your physician about maybe using a lower dose of estrogen. It's unclear whether switching to a lower dose will improve the headache if it does develop while you're on an oral contraceptive medication.

And then also, you might want to think about the sensitivity in terms of the absolute change in estrogen versus the relative change. So again, sort of that drop in estrogen is what may be triggering migraines. So maybe not doing the placebo may help to avoid those falls in estrogen level.

And then in terms of the long-term use of oral contraceptive medications, birth control pills for a longer period of times may increase your risk of some certain cancers, like cervical cancers. However, the risk tends a decline after stopping the use of birth control pills. And then in this era, of course, we're talking about breast cancer risks and so forth. So the risk regarding breast cancer tends to be mixed. And so we're not clear about that.

Lindsay Weitzel, PhD:
Is there anything else that you would like to add to this topic before we close today? It is quite a topic. It feels like you could talk forever on it, but is there anything else you'd like to add before we close?

Hope O'Brien, MD:
I think the one thing I would like to add is especially in teenagers and young girls who might be starting their menstrual cycle and they're concerned about the use of oral contraceptives, and maybe that might be an option for them, I will tell you that in girls, we've done a study, and what we've seen is that the levels of estrogen and progesterone tends to vary. So it doesn't really stable out until they're older. And so I would probably avoid using it in those who are just starting their menstrual cycle or very early on.

Lindsay Weitzel, PhD:
Thank you so much for being here and answering all these questions. Thank you everyone for joining us this week. Please join us again on our next episode of HeadWise. Goodbye, everyone.