MIGRAINE WORLD SUMMIT

TRANSCRIPT

INTERVIEWS WITH WORLD-LEADING EXPERTS

BEGINNER'S GUIDE TO HEADACHE TYPES

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Introduction (00:05): So new daily persistent headache (NDPH) is often misdiagnosed as chronic migraine or status migrainosus, where you're having a migraine attack lasting longer than 72 hours. However, the onset is a little bit different. So, someone who has new daily persistent headache typically does not have a headache disorder history, and instead, they have a sudden onset of a new type of headache and it is continuous without going away. The typical presentation is that they can tell you the exact day it started. So when a patient tells me, "On June 25th, I got this headache and it has not gone away," that clues me into a new daily persistent headache. Now, we think that in terms of migraine, which has fluctuations in the dysfunction, new daily persistent headache is more of a continual dysfunction.

Elizabeth DeStefano (01:01): Accurate diagnosis of headache disorders, as with any medical condition, is critical to proper treatment. Understanding the signs and symptoms of the multitude of different types of headache is an important part of that process. Here to help us with an overview of various types of headache, including head pain as a symptom of migraine, is Dr. Courtney Seebadri-White. Dr. Seebadri-White, welcome to the Migraine World Summit.

Dr. Seebadri-White (01:26): Thank you for having me.

Elizabeth DeStefano (01:28): So, the International Classification of Headache Disorders (ICHD-3) very helpfully outlines categories of headaches. What is the difference between primary headache and secondary headache disorders?

Dr. Seebadri-White (01:42): So, I find it's easier to explain what a primary headache disorder is by first explaining what a secondary headache disorder is. A secondary headache disorder is secondary to or due to another cause. So, for example, having a headache due to a bleed in the brain, that would be a secondary cause of headache. Primary is when you don't have that underlying cause that leads to the headache and rather, it has to do with the dysfunction of the nervous system itself causing symptoms rather than being due to something else.

Elizabeth DeStefano (02:16): So primary headache isn't a symptom of a separate underlying condition; secondary headache is due to another medical condition?

Dr. Seebadri-White (02:24): Correct.

Elizabeth DeStefano (02:26): So, what proportion of headache conditions do primary headache disorders comprise?

Dr. Seebadri-White (02:32): That's a good question. So, in my practice, it's a little biased because the people who come to me [at] the outpatient general neurology office, it's going to be more primary headaches that I see. Whereas in the urgent care setting, in the emergency room setting, it'll be more secondary-type headaches, particularly because people with primary headaches, they tend to have them frequently over time. Whereas someone who has a secondary headache disorder, usually it's someone without any history of any kind of headache and it's a new-onset headache.

Elizabeth DeStefano (03:14): So whether a headache disorder is primary or secondary obviously very clearly affects the treatment plan. What about treatment options?

Dr. Seebadri-White (03:25): So, treatment options for those with primary headache disorders focus more on treating the symptoms and the underlying dysfunction of the nervous system.

Unfortunately, with primary headache disorders, we don't have any cure for them, but instead we can decrease the frequency of those flare-ups, those episodes of dysfunction. Whereas secondary headache disorders, there's usually an underlying cause that we can usually intervene on. That being said, some primary headache disorders — for example, migraine — can appear in the setting of a secondary headache disorder. So that's where it gets a little confusing. You can have both. More extreme examples, I would say is if there is a bleed or a tumor — removing that, stopping the bleed — removing that tumor can definitely help alleviate the issue. That being said, people who are genetically susceptible could have prolonged primary headache disorder after that event.

Elizabeth DeStefano (04:25): So, let's dive into primary headache disorders then. What are the most common types of primary headache and their main signs and symptoms?

Dr. Seebadri-White (04:33): So, I can easily name four off the top of my head that are very common primary headache disorders. So, the first one is migraine, which we all know about, but this is again due to dysfunction of the nervous system, which causes a lot — a various spectrum of neurological conditions. But headache is the most common symptom that occurs with it. So, in some people, it is hormonal changes. In some people, it is an illness. Some people, it may be something like a tumor, or a bleed, or increased pressure that starts the process. But then you go on and you have this sort of tendency for the dysfunction to get worse, and then you have migraine attacks.

Elizabeth DeStefano (05:21): And so, when we're talking about migraine as one of the primary headache types, that includes migraine in all of its subtypes. So whether we're talking about episodic or chronic migraine, whether we're talking about menstrual migraine, those would be all included in this migraine type of primary headache disorder.

Dr. Seebadri-White (05:40): Yep. Migraine with aura, vestibular migraine, hemiplegic migraine, migraine with unilateral motor symptoms (or MUMS). Again, all of these come from the same sort of idea that it is due to an inherent dysfunction of the nervous system.

Elizabeth DeStefano (05:56): And if you're thinking of symptoms, you're thinking of — certainly for many of those types — the head pain, the throbbing pain, moderate to severe pain, often one-sided, or the other symptoms that might go with the specific types of migraine.

Dr. Seebadri-White (06:09): Right. So, nausea, sensitivity to light and sound, dizziness, lightheadedness, brain fog, speech difficulties — the list goes on and on.

Elizabeth DeStefano (06:19): What about a next type of primary headache disorder?

Dr. Seebadri-White (06:22): So, another very common primary headache disorder is tension-type headache, where there's different schools of thought of exactly what this is. Some are under the belief that it's actually a subtype of migraine, in that the symptoms are migrainous but not as severe. Others do view it as more of a musculoskeletal issue, and it's due to the tension of the muscles that leads to the headache. A lot of the symptoms are similar, but in general, they're less severe. So, a mild to moderate headache, more of a squeezing sensation rather than a throbbing, pounding sensation. It can be accompanied by things like light sensitivity and sound sensitivity, but not always. And typically, while a migraine attack can affect your ability to do day-to-day things, such as it makes it harder to do your housework or do any kind of social activities that you want to do. People with tension-type headache, they tend to be

able to still function during a tension-type headache attack. It usually is not worsened by physical exertion.

Elizabeth DeStefano (07:30): OK, good to know. And I do want to mention that we have a dedicated interview on tension-type headache this year as well for those interested in more information.

Dr. Seebadri-White (07:40): A third headache type that is a primary headache disorder is cluster headache. This is a headache disorder where there is an abnormality in the trigeminal nerve. The trigeminal nerve comes around the side behind the ear and spreads out into three different portions. Those with cluster headache, it's usually the top portion, which we call V1, that is sending abnormal signals. In addition to pain signals — given that cluster headache is one of the most painful conditions known to people — it also has what we call autonomic symptoms or automatic symptoms. And these are symptoms that our body normally does that we don't have control over.

Dr. Seebadri-White (08:25): So it can lead to things such as tearing of the eye, the eye can become red; stuffy or runny nose; and also this feeling of restlessness where you can't sit still. So whereas someone with a migraine attack is probably going to want to lay in a quiet, dark room and rest, someone with a cluster attack is probably going to be moving around and not being able to sit still. This is again due to a dysfunction of the nervous system, specifically the trigeminal autonomic system. And so in this case, again, there's genetic predisposition. Sometimes there is an underlying environmental trigger that starts the whole process. So we do still assess for secondary causes in patients with cluster, but for the most part, again, treatment is to decrease the frequency and severity of attacks and then have rescue treatment available when the attacks do happen.

Elizabeth DeStefano (09:23): The ICHD-3 (the International Classification of Headache Disorders) also includes a group called “other primary headache disorders,” including new daily persistent headache and things like thunderclap (TCH) or sexual-activity-related headaches. What thoughts would you like to share on those?

Dr. Seebadri-White (09:41): So new daily persistent headache is often misdiagnosed as chronic migraine or status migrainosus, where you're having a migraine attack lasting longer than 72 hours. However, the onset is a little bit different. So, someone who has new daily persistent headache typically does not have a headache disorder history, and instead, they have a sudden onset of a new type of headache and it is continuous without going away. The typical presentation is that they can tell you the exact day it started. So when a patient tells me, "On June 25th, I got this headache, and it has not gone away," that clues me in to a new daily persistent headache. Now we think that in terms of migraine, which has fluctuations in the dysfunction, new daily persistent headache is more of a continual dysfunction.

Dr. Seebadri-White (10:37): And therefore, that's why you don't have discrete attacks; it's more of a continuous process. So it's possible that the actual pathophysiology — the changes in the nervous system — are a little bit different. So it is important to get the diagnosis. While treatment options are relatively similar to migraine — in terms of prognosis and sort of setting expectations for how you're going to live your life with new daily persistent headache — it's a little different from migraine.

Elizabeth DeStefano (11:06): And we also do have a dedicated interview this year as well on new daily persistent headache for those interested in learning more. And any thoughts on exercise exertion or sexual-activity-related headache that are important to be aware of?

Dr. Seebadri-White (11:21): Yes, so when people present with what we call a thunderclap headache — where it goes from zero to 100 in less than a minute — these can sometimes happen with primary cough headache, primary thunderclap headache, headache associated with sexual activity. This can also present in a secondary headache disorder called subarachnoid hemorrhage, which is a bleed in the brain that is life threatening. So it is important that when someone presents with these headaches in these situations, we first check for the secondary headache disorder, and if everything looks fine — there's no signs of bleeds, or aneurysms, or anything concerning there — then we can pursue it as a primary headache disorder.

Dr. Seebadri-White (12:04): And this is different from migraine. When someone presents with migraine and they fit the very classic definition, and there are no red flags, there are no concerning findings, you don't have to search for a secondary headache disorder. But again, with things like new daily persistent headache, primary thunderclap headache, primary cough headache, and headache associated with sexual activity, because they are so similar to these more life-threatening secondary disorders, it is important that we do evaluate for that first before we start treatment.

Elizabeth DeStefano (12:38): So, it sounds like it's that sudden onset, or something new and different piece, that's important to evaluating whether this headache is actually a secondary headache related to an emergent situation.

Dr. Seebadri-White (12:50): So, neurologists and headache specialists have a mnemonic that they use to remember which features of headache would have you concerned for a secondary type headache and we call this SNOOP4. So, "S" stands for systemic or full-body symptoms. So, if they are having fevers, weakness, if there is any kind of systemic illness that they have, that would key us in to look for secondary headache disorders. Next is the "N," which stands for new, and this is any new-onset headache. So someone could have a primary headache disorder. Let's say they've had migraines since they were a teenager. Now at 35, they're having a new headache type. I'd be looking for secondary causes.

Dr. Seebadri-White (13:38): "O" means onset, so like we discussed that thunderclap onset, we're going to definitely be looking for secondary causes in that situation. The second "O" is for older age. If someone has a primary headache disorder, it typically starts in their teens, 20s, maybe even 30s. But a new headache, a new headache disorder that starts in their 50s, 60s, I am going to be more concerned for a secondary headache disorder. And then we have the four "P's." The first is papilledema, which is the medical term for swelling behind the eye. If it is positional, so sitting up or lying down makes the headache worse or better; if it's involved in pregnancy, then we want to be concerned for secondary disorders. The last "P" is due to a pattern change, so something that's clearly triggering it, such as a cough or exercise.

Elizabeth DeStefano (14:40): So, we've talked about already a number of different primary headache disorder types. So, I'd like to come back to three that we hear quite a bit about and ask you how they're differentiated really broadly from one another. When you're thinking about migraine, tension-type headache, and cluster headaches — how are they differentiated, and what type of diagnostic tests, for instance, might play a part in that differentiation?

Dr. Seebadri-White (15:06): So, with all three of those primary headache disorders, there is no diagnostic test. We instead use the diagnostic criteria. So based on what the patient is telling me that they're experiencing, it leads me to one of the three diagnoses. One way that I can easily differentiate between the three is by asking the patient, "When you get this headache, do you feel better if you're laying down in a quiet, dark room for a bit?" And if they say, "Yes, that makes me feel better," that makes me think that this is more likely migraine. If they say, "No, I can't sit still; I'm pacing the room," that makes me think this is more cluster headache. And if they say, it doesn't make a difference, I'm thinking more tension-type headache. So that's the one question I ask to really help me differentiate between the three.

Dr. Seebadri-White (16:00): Tension-type headaches are very similar to migraine attacks but do not cause the same amount of functional impairment. Finally, with cluster headache, it actually affects the hypothalamus, which is the part of the brain that is involved in a lot of automatic functions, including controlling our heart rate, controlling our level of awakeness or arousal. So people who have a cluster attack, when the hypothalamus is stimulated, they're going to be more alert, more awake, and they cannot sit still. Sometimes they're holding onto their head or they're kind of pressing against their eye where they have the pain.

Elizabeth DeStefano (16:37): That's very helpful; thank you. So, let's now talk about secondary headache types. What are the most common types of secondary headache and their main signs and symptoms?

Dr. Seebadri-White (16:49): So, the most common ones that I see in the outpatient office are due to pressure changes in the CSF (the cerebrospinal fluid), which is the fluid that surrounds the brain and the spinal cord. So idiopathic intracranial hypertension (or IIH), is when the pressure is elevated. This can be due to either producing too much fluid or, more commonly, difficulty draining the fluid. When the pressure is increased, it presses on the meninges, which is the covering of the brain. The brain itself does not feel pain, but that covering, the meninges, very much can feel pain. And when the pressure goes up, it stretches those membranes and can lead to headache plus other symptoms. So, some of the common symptoms of IIH include blurred vision or tunnel vision, where it gets dark on the sides of your vision; hearing a whooshing sound; or feeling your heart beating in your ear because of that increased fluid. You can get headache, and sometimes it can be migrainous, but not always.

Dr. Seebadri-White (17:52): So, a lot of folks will come to me with symptoms of migraine, but when I do my neurological exam, I will notice things like papilledema — the swelling in the back of the eyes — that suggests increased pressure, and that will lead me to look down the secondary route. And then when patients tell me things like they're having tunnel vision or they're hearing the whooshing in their ear, that also clues me in that this may be a secondary headache type.

Dr. Seebadri-White (18:21): Moving in the other direction, there is spontaneous intracranial hypotension (or SIH), and this is due to a low pressure of the fluid that surrounds the brain and spinal cord. Causes for this: not producing enough or the fluid is actually leaking somewhere. So, a very common experience that people will have is if they are dehydrated, they will have less fluid, and it causes a headache that is associated with dehydration. And that's because, again, when the fluid is lower, it's actually causing the brain to sink a little bit in the skull and pull on those membranes, the meninges. And that pulling is what causes the symptoms.

Dr. Seebadri-White (19:04): Other causes: If someone has had an epidural or a lumbar puncture, where we're using a needle to enter the spinal cord space and collect fluid, sometimes that does not completely close up, and then it leads to a leak. People with any kind of connective tissue disorder are at higher risk for SIH, just due to the membranes that are holding everything together are more likely to stretch on their own and cause these pouches where fluid collects. So people who present with an SIH headache, their headache tends to be worse when they're upright because, again, gravity is pulling the brain down and causing increased stretching. In addition to the headache and sometimes migrainous features, you also will have cognitive impairment, speech impairment, sometimes difficulty moving the muscles in your mouth.

Dr. Seebadri-White (19:55): I have had a patient who presented with arm weakness because the pressure was so low it was actually pressing on nerves that go out of the neck and to the arms. So it can be a very wide range of symptoms. And again, this is often misdiagnosed as migraine because it presents with a headache, it presents with cognitive fog, it can have nausea, it can have dizziness. All these are typical migraine symptoms. But in a patient who says, "When I stand up, these symptoms get worse, and when I lie down — again not to rest, but just physically lying down — it feels better." And then, if they do have a history of a spinal injection like an epidural or a lumbar puncture, or if they do have a suggestion of a connective tissue disorder, I am going to go search along that secondary pathway. So again, these are very common secondary headache disorders that I see often diagnosed as migraine first.

Elizabeth DeStefano (20:59): You've shared so much great information about different types of secondary headaches related to low- or high-pressure situations. You mentioned earlier also those who may present typically in an emergency-department-type setting with a head injury or trauma to the head or neck, of course. What about also conditions that can interfere with our balance or homeostasis — hypertension, hypothyroidism, fasting — those types of things that may disrupt our balance and lead to headache?

Dr. Seebadri-White (21:32): Right. So, in a person who does have a primary headache disorder, I always tell my patients, "The brain likes routine; it likes to keep things steady." So while having a migraine attack is not directly due to the fact that, let's say, you didn't sleep well that night, but it does contribute to increasing the risk of developing an attack. So, people who already have that predisposition to develop migraine attacks, which is the definition of migraine disease, there are certain things that can kind of affect that threshold. Now very common ones are: lack of sleep, missing a meal — so fasting — not hydrating, stress. Again, these do not directly cause migraine attacks, but in someone who is susceptible, it can affect their threshold. Now things we can do to increase that threshold — especially things we can't control like our hormonal changes or the weather, or again, the stress around us — having things like medications and other treatments — neuromodulation devices —again, a whole set of treatments can help increase that threshold so that we can tolerate more of these things that throw us off balance.

Elizabeth DeStefano (22:47): So in order to do that, it sounds like it's necessary to figure out if that headache that's resulting from hypertension or from fasting is solely due to that condition or if it's a sign of an underlying primary headache disorder of migraine that's being triggered because of that secondary underlying situation.

Dr. Seebadri-White (23:07): And it's very challenging, but that is what my job is; that's what I was trained to do — to be able to make those differentiations.

Elizabeth DeStefano (23:15): So, we hear a lot about different additional types of headache types that we haven't mentioned specifically yet. And I'd love to know how you would characterize some of these types that we hear about: medication overuse headache (MOH) — previously referred to as rebound headaches — sinus headaches, caffeine headaches, and also menstrually or hormonally related headaches.

Dr. Seebadri-White (23:39): Yeah, so one thing to be aware of is that headache can be a symptom of a lot of different conditions. So if someone presents with headache, a provider's job is to really differentiate: Is this due to a primary headache disorder or due to something else? And so those something else can be, for example, a sinus headache may come from a sinus infection. And so that differentiation is a little bit more nuanced. And again, that's why we do have specialists in this field who really understand that. But what I would say is things that — such as menstrually associated headache, caffeine headache — all of these things really could fit in primary or secondary. It just depends on the bigger picture. And so it is my job as a provider, as a physician, to be able to make that differentiation. And sometimes we're not perfect. We may not get it right the first time, but we then continue evaluation. We do different studies, and we work with the patient, and the patient tells us how they're responding to treatment, and that'll help guide us to getting you to feel better.

Elizabeth DeStefano (24:49): And it can be a journey, right, with different steps in trial and error and partnership.

Dr. Seebadri-White (24:55): I tell patients the first time I meet them and I diagnose them with any headache disorder, I say, "This is the beginning of your journey." So, this challenge of headache disorders and headache medicine is that we don't have a quick fix for anything. We don't have a blood test we can take and say, "Oh, you have cluster headache; you have migraine." It's again, it's a more detailed — and there is a lot of trial and error, unfortunately. I do hope for the future of headache medicine that we will get more specific assessments. We already have some, for example, migraine-specific treatments, so we're moving in the right direction, but it's going to take some time.

Elizabeth DeStefano (25:35): Yeah. Well, how critical is proper diagnosis in headache disorders, and who really can make these diagnoses when you are talking about these, kind of, interwoven potentially, medical conditions?

Dr. Seebadri-White (25:49): Primary care providers are somewhat trained in being able to recognize primary headache disorders, such as migraine and tension-type headache, and are able to do some of the first-line treatments. However, not everybody presents like the textbook, and so in fact, most people don't present like the textbook. So if the primary care provider is not comfortable with the diagnosis, they will refer to a neurologist. So, all neurologists are trained specifically in the diagnosis and management of various headache disorders. And so again, that's the type of doctor who would be able to sit down with you, get your history, do an exam, make the diagnosis, start first-line treatments.

Dr. Seebadri-White (26:37): A headache specialist is a provider who spent extra time specifically studying headache disorders, and they're typically good at distinguishing when it is not quite clear what is going on. So it's really a really unique situation where you present as multiple headache types, we're not really clear what's going on, or you're not responsive to first-line treatments, and you need a more specialized opinion. Headache disorder specialists are also

involved in the latest research. So some of the new medications that have come out in recent years, headache disorder specialists were involved in the clinical trials.

Elizabeth DeStefano (27:19): Many people living with a headache disorder attempt to seek treatment for that in their primary care setting, and many struggle for a very long time with proper treatment, sometimes due to actual accurate diagnosis, as we talked about initially. When is it really a good idea for a patient to seek a second opinion or to move into more specialized care with a neurologist or headache specialist in diagnosis or treatment of their condition?

Dr. Seebadri-White (27:48): So, I would say if you go to your primary provider and they say, "I believe you have migraine," and they start you on some of the standard first-line treatments for migraine, but you're not getting a response that you were looking for, that would be a reason to go to get the second opinion from a specialist. And it's not because the primary care providers don't know how to treat migraine, but some people will need a little bit more of an individualized treatment for them, and that's where a neurologist comes in. And then, if the neurologist finds that secondary-line treatments, individualized treatments, these adjustments are not quite doing what they need to do, we're not getting the results we want, then we would refer to a headache specialist.

Dr. Seebadri-White (28:33): The reason for this sort of tiered approach is because of the number of specialists — there are less than a thousand headache specialists in this country [the U.S.], and so it's much easier to access a primary care provider. Even accessing neurologists in some areas is very difficult. You may be on a waiting list for six months. And so, being able to start with a provider you already have and at least do a trial of some of these first-line treatments can be very helpful and also can make it so that your neurologist or headache specialist can say, "Hey, we've already tried these treatments; they didn't work, so let's move right over to these ones immediately and not reinvent the wheel."

Elizabeth DeStefano (29:16): Where can we learn more about you or the work that you're doing?

Dr. Seebadri-White (29:21): Most of the work that I do is on social media. On most social media apps, under the username "C" for Courtney, "S" for Seebadri, "White MD" [CSWhiteMD], and that is my username on most of these platforms.

Elizabeth DeStefano (29:38): So, "CSWhiteMD" on most social media platforms?

Dr. Seebadri-White (29:42): Correct.

Elizabeth DeStefano (29:43): Excellent. That's great. Thank you so much for this incredible overview of so much information on types of headache and main signs and symptoms, and thoughts on approach to care. Are there any final thoughts that you'd like to share with our community on this topic, Dr. Seebadri-White?

Dr. Seebadri-White (30:03): I would say, and I tell this to my patients all the time, you know your body best. So, when I say a lot of times, for primary headache disorders, we can manage it on the outpatient side. If you feel that something's different, something is not right, it is OK to seek that emergency help. But do understand that the focus is making sure that you're not in a life-threatening situation. And so again, there [are] multiple tiers involved, and everyone has

their own role. So it is, unfortunately, a lot of work is put on the patient. But again, different programs like Migraine World Summit really help arm you with that knowledge and information to advocate for yourself.

Elizabeth DeStefano (30:46): Thank you so much, Dr. Seebadri-White, for joining us on the Migraine World Summit.

Dr. Seebadri-White (30:51): Thank you for having me.