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Understanding Pain Management in Children with Neurological Disorders

Dr. Turck:

Welcome to *NeuroFrontiers* on ReachMD. I'm Dr. Charles Turck, and joining me to discuss their 2024 American Academy of Neurology Annual Meeting session on pain management in children with neurological disorders are Drs. Lauren Treat and Wendy Gaultney. Dr. Treat is a pediatric neurologist at the Children's Hospital of Colorado and also practices pediatric palliative medicine. Dr. Treat, thanks for being here today.

Dr. Treat:

Happy to be here. Thank you.

Dr. Turck:

And Dr. Gaultney is an Assistant Professor in the Department of Anesthesiology at the University of Colorado. Dr. Gaultney, it's great to have you with us as well.

Dr. Gaultney:

Thanks for having us.

Dr. Turck:

So if we start with some background, Dr. Treat, would you tell us about your session and the brain's role in the experience of pain?

Dr. Treat:

Absolutely. We know that children who have neurological disorders often experience pain in different ways, and it's important for neurologists to be aware of the possibility that this could be occurring. Children are a vulnerable population. They're not able often to articulate the location and experience of their pain as eloquently as adults and advocate for themselves, and so it's really important that we increase awareness for their treating physicians about the possibility of pain and how it might manifest and how we need to be aware and attentive to this pain. Especially as neurologists, we have a role in understanding and explaining why that pain might be happening, especially if there are lesions in the central nervous system or other things that are predisposing their brain signaling to be altered or dysregulated. These children have the possibility of experiencing heightened pain signaling and/or decreased ability to have inhibitory pathways that help modulate pain and help it be under better regulation, and so particularly for these children, looking at whether they have pain and whether it's adequately managed is an important topic.

Dr. Turck:

Now as I understand it, Dr. Gaultney, pain psychology is increasingly recognized as an important aspect of pain management. So how can incorporating principles of pain psychology into neurology practice enhance patient care?

Dr. Gaultney:

So one of the main principles of pain psychology is really to understand each patient and their family through their unique biological, psychological, and social experience. So a fair evaluation for pain really includes all of those components. Whether you have a multidisciplinary team or you're doing an evaluation on your own, it's really important from the beginning to introduce the pain as physical, social, and emotional 100 percent of the time, and the more we all kind of shift that way and get rid of things—saying things like, "Oh, well, this person has a real physical reason for that pain," things like that—the less we set patients up for just misunderstanding pain and its complexity. Another important part of pain psychology is learning how to communicate really well what we know from research in a way that's accessible and appropriate for families. So a lot of what I do is making complex topics digestible and

accessible. A lot of families get lost in the weeds, and we all know they kind of walk away with different understanding of what we thought we had communicated, so really pain is one of those places we really find that communication is super important—so using visuals and letting them ask questions to clarify—and it's okay sometimes to tell families you aren't sure and you'll look it up or you'll find a resource, but just kind of recognizing that pain is complicated and that sometimes it takes a few tries to communicate well.

Dr. Turck:

Another question for you, Dr. Treat. You started to touch on altered pain signaling. I was wondering if you could tell us a little bit more about it, how it affects patients with pain, including those with severe neurological impairment.

Dr. Treat:

Absolutely. We know that the brain is really powerful in the way that it senses pain and also in the way that it has this modulation system. There's very complex regulation in normal circumstances of how we experience pain through our central processing centers, the thalamus, and the different cortex areas where pain is received and then into the limbic structures using hippocampus and the amygdala, and helping to layer on top of it what else is going on in the environment or what else is relevant. And we know that there are both facilitatory pathways that have us be able to attend to our pain with more attention because something is going on in the environment that's telling our body, "Hey, look at this. Pay attention." And then there's also these inhibitory pathways through the periaqueductal gray matter and again, also sometimes through those limbic structures that help us know when to tamp down that signal and tell us, "Hey, this actually, in the context of everything else, isn't going to be as helpful for you." This is really an evolutionary adaptation, and so those pathways try to say, "Hey there's something else more important to pay attention to here," to actually decrease that signal a little bit so that you can point your energy towards this other stuff. And so part of being in the neuro space and understanding how the pain is happening and what else is happening in the body and in the environment is really tapping into those facilitatory and inhibitory pathways in a way that helps patients understand more about what's going to keep them safe and how they are going to feel empowered in their body to be able to get through this or cope with it.

One of the big things in children with altered cognition is what we call severe neurological impairment: multiple impairments in more than one domain, usually motor and cognitive, that impair someone's ability to express themselves and also, perhaps, impair their ability to reason through or be able to tap into some of those therapies that might help them distract from their pain, and so in those situations in particular, it's really important for us to come up with some nonpharmacological strategies that don't require cognition, so things that are really very somatic—things about heat, things about cuddling, movement, things that help someone feel like their body is less hostile to them and that they can just physiologically relax a little bit more rather than trying to talk them through cognitive strategies to get them distracted and away from that pain.

Dr. Turck:

For those just tuning in, you're listening to *NeuroFrontiers* on ReachMD. I'm Dr. Charles Turck, and I'm speaking to Drs. Lauren Treat and Wendy Gaultney about pain management in children.

Dr. Gaultney, how else can providers effectively communicate with patients who are experiencing pain and their families to support them in their journey with pain treatment?

Dr. Gaultney:

Well, the first thing I would say is make sure that right off the bat you communicate validation and empathy. Some main things sometimes that families walk away with is that this provider heard me, cared about my pain, my child's pain—or my pain if it's the child — and that touches on how important that social piece is again for understanding pain and treating pain. Humans are supposed to care about one another's pain, and if we always treat it as sort of this kind of perfunctory, "Oh, let's not spend too much time on that because there are other problems going on," it really communicates that message that you don't care, whether or not that's what you're what you're aiming to do, which is "I'm not comfortable with this" or just "I don't have time." Very often pain and quality of life is the patient's and the family's priority, and so that's always the first step. So kind of look away from the computer, listen to their concerns, and that goes a really long way to let them know that you care and you want to help them.

And then I would suggest informing them early on that the journey to treating pain can have its ups and downs because every person's pain system is not only uniquely developed, but it's affected, as Dr. Treat was mentioning, by environment and everything going around, so it can be helpful to let them know that pain is rarely resolved with one single intervention or a miracle cure. So it tends to be good to have that comprehensive plan that involves everyone in the family and learning what is effective for that specific patient over time. And this helps caregivers too because parents always feel so helpless during this journey. Any time the pain gets worse or there's a flare, it's really scary for them, so reminding them that because pain is a danger messaging system, the opposite of danger is safety, and so they always are able to provide that physical and emotional safety even during a flare, so they are automatically helping calming that pain signaling, even if they don't have that miracle cure or the single intervention. I think those are kind of key pieces that we can

communicate well with patients from the beginning and throughout their journey.

Dr. Turck:

Now before we close, I'd like to hear some key takeaways from each of you on how we can best evaluate and treat patients with neurological disorders and pain. Dr. Treat, would you care to start us off?

Dr. Treat:

Yes. I think some of the summaries from our session are that infants and children do experience pain and deserve appropriate management. Historically, there's been a lot of bias and a lot of incorrect assumptions about children's experience of pain because they don't manifest it the same way as adults and can't articulate their experiences, again, as eloquently as adults can. They've been ignored in many times in history, and often still at present there's a worry that attending to a child's pain could heighten the anxiety around it, especially for parents and for children. But we know that pain that's not attended to early on in life actually can cycle and become hypersensitized and set up some really negative patterns.

So again, emphasizing that infants and children do experience pain and deserve appropriate management, it can be both physical and also emotional and psychological, and so attending to both of those aspects as well, certainly looking for any physiologic trigger for pain and trying to rule out reversible causes of something that could be distressing either on the tissue level or on the visceral side or with regard to neuropathic pain, if there's a lesion that's making them more vulnerable to experiencing pain through their neuro communication. Those are really big takeaways as far as how to be aware of pain in children and to be thinking about who's at risk and what where it might be coming from and what type of treatment could be appropriate for them.

Dr. Turck:

And, Dr. Gaultney, what are your thoughts?

Dr. Gaultney:

I think one key takeaway is not to forget your humanity in that room and the patients and families. Pain is universal, and we all understand that we want to fix it or run away from it because it's unpleasant by nature, but some of the best resources that we have are just being human with our patients and listening well and caring. And oftentimes, we can do a lot more, giving treatments and resources that help as well, but sometimes that can be one of the key pieces. So just like caregivers, we kind of want to quickly fix their pain or pass them on to someone that we think might be able to quickly fix their pain but we kind of forget to harness the social and emotional tools we have as humans, which are really powerful in pain management.

Dr. Turck:

Well, with those final comments in mind, I want to thank my guests, Drs. Lauren Treat and Wendy Gaultney, for joining me to discuss their 2024 American Academy of Neurology Annual Meeting session on pain management in children with neurological disorders. Dr. Treat, Dr. Gaultney, it was a pleasure having you both on the program today.

Dr. Treat:

Glad to be here.

Dr. Gaultney:

Thanks so much for having us.

Dr. Turck:

For ReachMD, I'm Dr. Charles Turck. To access this and other episodes in our series, visit *NeuroFrontiers* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening.