Fine-tuning Diagnosis and Management of EDS in Patients with Narcolepsy and OSA

I Shouldn't be this Sleepy: A Look into EDS

CMEO Podcast Transcript

Dr. Richard Bogan

Hello. I am Richard Bogan, and on behalf of CME Outfitters, I would like to welcome and thank you for joining us for episode one of the four-part, CMEOCast series, *Fine-tuning Diagnosis and Management of EDS in Patients with Narcolepsy and OSA*. Today's episode will address, "*I Shouldn't be this Sleepy: A Look into EDS*." This activity is brought to you by CME Outfitters, an award-winning accredited provider of continuing education for clinicians worldwide.

Again, I'm Richard Bogan, president of Bogan Sleep Consultants, LLC, Medical Officer of SleepMed Incorporated and Director of SleepMed of South Carolina. I'm also the Associate Clinical Professor at the University of South Carolina, school of medicine in Columbia, South Carolina, and Associate Clinical Professor at the Medical University of South Carolina in Charleston, South Carolina. I'm very pleased to be joined today by Nancy Foldvary-Schaefer, professor of neurology at the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University and Director of the Cleveland Clinic-Sleep Disorders Center in Cleveland, Ohio. Welcome Nancy.

Dr. Nancy Foldvary-Schaefer:

Thank you for inviting me.

Dr. Richard Bogan

Yeah. This is great. So we're going to talk about excessive daytime sleeping. And so to frame today's episode, let's start by reviewing our learning objective, which is to identify the burden of EDS on patient functioning and quality of life, highlighting the need for early detection and treatment initiation. We know it's amazing that patients are sleepy and they don't know how sleepy they are, because sometimes they are tired and sometimes they're depressed or moody or irritable or they can't think and they can't remember. And some of the patients that are the most sleepy have narcolepsy. So Nancy, let's begin with a look at what we know about the incidents of narcolepsy and how it relates to EDS.

Dr. Nancy Foldvary-Schaefer:

Yeah. So EDS is the hallmark feature of narcolepsy and up to 200,000 people in the United States have narcolepsy. Importantly, on average, about 5% of patients seen in the United States Sleep Disorder Center have a primary diagnosis of narcolepsy. And narcolepsy is the second most common cause of daytime sleepiness seen U.S Sleep Disorder Center after obstructive sleep apnea. So it's an important cause of excessive daytime sleepiness. Also, comorbid conditions are commonly present in people with narcolepsy and that can really confound the diagnosis. So for example, 25% of people with narcolepsy also have obstructive sleep apnea and having OSA alone can delay the recognition of narcolepsy.

Dr. Richard Bogan

Exactly. Well, you mentioned that narcolepsy can occur with other primary sleep disorders. And I think that's one reason sometimes we have trouble making the diagnosis, remarkable illness that is unique and gives us a window into how the brain controls sleep and wake, and these individuals are impaired, but they oftentimes they have other co-morbidities.

Dr. Nancy Foldvary-Schaefer:

Right? So a host of medical psychiatric comorbidities, and as we already suggested sleep disorder comorbidities exist in this population. So there was a retrospective analysis using health claims database data that involved over 9,000 narcolepsy patients and over 46,000 controls. And this study identified an excessive prevalence of many psychiatric and medical disorders. Top of the list besides comorbid sleep disorders are mood disorders, depression, anxiety, headache disorders, as well as diabetes and obesity. And also important to recognize is that the treatments of some of these medical and psychiatric disorders can either exacerbate daytime sleepiness in people with narcolepsy, or can potentially mask important features of the presentation of narcolepsy. So as one example, using antidepressants for treatment of mood disorders in this population can theoretically mask the presence of cataplexy which can delay the diagnosis of narcolepsy.

Dr. Richard Bogan

Exactly. I'm impressed because many people don't realize they have disrupted nocturnal sleep. And when you talk to a bed partner of a patient who sleeps with a narcolepsy patient, they'll tell you they're busy at night and oftentimes they have dream enactment or vivid dreams and other things that are going on. And oftentimes they get diagnosed even as having insomnia. And as you said, a significant number of these individuals, maybe as high as 35%, have comorbid mood disturbance and other things that are going on.

Dr. Nancy Foldvary-Schaefer:

That's right. And so REM sleep behavior disorder, dreaming acting behaviors, periodic limb movements, kicking at night, even restless legs and insomnia presentation can all confuse the presentation of narcolepsy. And this has been demonstrated that 60% of people with narcolepsy are misdiagnosed with some other common disorders like insomnia and depression even after seeing multiple providers. And it really speaks to the need for more universal education of frontline providers who treat patients with common disorders like insomnia and depression.

Dr. Richard Bogan

Yeah, I would agree. I had a school teacher one time who came to me, he wanted a sleeping pill because she was waking up frequently at night. She said she was busy all night because she was dreaming all night and she would take a nap when the kids were reading, she would take a map in class, but people with insomnia can't nap, but she thought she had insomnia. So this is really very, very common. We talk about the sleepiness and narcolepsy, but what do we know about the impact of excessive sleepiness and individuals with obstructive sleep apnea?

Dr. Nancy Foldvary-Schaefer:

Yeah. So excessive daytime sleepiness is among the most common daytime symptoms reported by obstructive sleep apnea patients also. And so, a multicenter trial that included 128 patients with moderate to severe OSA who were treated with CPAP for three months and had baseline and follow-up assessments really illustrates that a good percentage of people with obstructive sleep apnea who are fully treated with CPAP therapy continue to have daytime symptoms, including excessive daytime sleepiness. This particular study used the Epworth Sleepiness Scale, as well as the FOSQ and derived in MSLT, which is an objective measure of daytime sleepiness, and found that over half of the population, despite using CPAP for at least six hours, continue to be abnormal on the MSLT, which is an objective measure of daytime sleepiness. So this is important, not only for the quality of life of people with obstructive sleep apnea, but also could be an important cue that maybe you're dealing with a patient with obstructive sleep apnea, who also has a hypersomnia disorder, potentially even narcolepsy.

Dr. Richard Bogan

Yeah, well said. When patients come to us, they come to us because they don't want to die from the sleep apnea, but they also don't feel good. And the majority of them are excessively sleepiness. Most common as you said in the clinic, is the most common presentation for sleepiness is obstructive apnea. But it is impressive that some of these individuals, despite our best efforts, are still sleeping and we need to pay attention to that, not just look at their age on their download, but ask them, are they sleepy? And many times the patients don't know how sleepy they are, to be honest with you, they've been that way for a long period of time and sleepiness can present in many different ways. Can you expand on that?

Dr. Nancy Foldvary-Schaefer:

Yes. So I think there's a large percentage of patients who probably underestimate daytime sleepiness, particularly because they've known themselves to be sleepy for so long. I think this is common in narcolepsy because sleepiness starts in narcolepsy very often, even the first decade of life, often the second decade of life, but sleepiness can present in so many shapes and forms and it's really different in young patients versus old patients. So, for example, in children, sleepiness often presents sort of like an attention deficit hyperactivity disorder with hyperactivity, distractibility, irritability and mood complaints can also present as sleepiness in adults, but I think that's most impressive in the pediatric population. But also it's important to note that across all ages, people with sleepiness have a lower performance academically, they struggle to perform optimally at work, they have a high incidence of accidents and injuries, including motor vehicle accidents.

Dr. Richard Bogan

Yeah. I mean, to be sleepy... I say all sleepy people are tired, but not all tired people are sleepy, so you have to sort of separate those, but I've had a patient, for example, with narcolepsy, you have automatic activity driving down the road and miss the exit and four miles later realize it. And what they ask about was their memory. So the effect on executive function, memory, mood, all those things are very, very important and given this high incidents of difficulty in diagnosis, both in obstructive sleep apnea and narcolepsy, qualifying are they sleepy and quantifying how they are sleepy, do you want to comment on some of the patient reported outcome measures and methods by which we can measure sleepiness?

Dr. Nancy Foldvary-Schaefer:

Yeah. So beyond asking the patient, and if the situation permits, asking caregivers and parents and loved ones, I think it's very useful as well. Beyond those subjective measures it's very useful to use validated subjective measures that have been proven over time and studied for their validity in both narcolepsy and obstructive sleep apnea. So the Epworth Sleepiness Scale is the main one. It's an instrument that's used worldwide for ascertaining one's likelihood of falling asleep during the daytime. And it's a simple scale measuring one's chance of dozing in eight different everyday situations. The Epworth can also be used not only as a diagnostic supplement, but also to track performance over time and to track response to therapy over time.

Another commonly used instrument is the FOSQ. So this is a measure of how sleepiness affects daytime functioning, and it includes five different domains, including productivity activity, vigilance, social outcomes and intimate relationships. But as you allude to, it's important to recognize that subjective measures rely on the person's own ability to report this. And not everybody really reports this well, some people describe themselves as sleepy, excuse me, as tired, even though they're sleepy, or sleepy when they're tired, or cognitively impaired with a poor memory or even distractibility as if they have an attention disorder.

Dr. Richard Bogan

Sure. And I found the FOSQ very helpful. We do that every time the patient comes in, we do an Epworth score and FOSQ, we actually do an insomnia index as well, which is kind of interesting, but the FOSQ gives you some insights into the functionality, the driving performance, for example, or thinking and memory executive function. So it gives you a functional assessment of how the sleepiness is affecting someone. And thinking about the scores and I think there's some benefit, my upward score is about a five, I think. Nope, yours is, but tell us about what the actual scores are.

Dr. Nancy Foldvary-Schaefer:

Yeah, mine is probably a, I don't know, a five or a six, I'd say. So the ESS is very easy to administer, the choices range from zero to three. So over eight items, the total score can be as high as 24. So from zero to 24, and we know based on a large body of literature that scores on the upward sleepiness scale of 10 and higher are considered abnormal, therefore indicative of some degree of daytime sleepiness and scores of 16 and higher are indicative of more significant daytime sleepiness. The MSLT has been correlated with the Epworth and so we know that there is somewhat of a linear relationship or reverse linear relationship between the Epworth and the MSLT. Meaning that higher scores on the Epworth indicate more sleepiness, which is represented by a shorter mean sleep latency. Also, by the way, we know that different populations present differently on the Epworth.

And so for example, sleep apnea populations tend to score themselves lower on the upward than narcolepsy patients. And one study using the European Narcolepsy Network data identified that OSA patients had a mean Epworth of nine, whereas narcolepsy patients had a mean Epworth of 17. So I think the Epworth is very useful, we do it as well in all patients, we do the Insomnia Severity Index as well, and the FOSQ. And I think just looking at those three instruments supplemented with the clinical history can really go very far in identifying the person who has a CNS hypersomnia disorder like narcolepsy.

Dr. Richard Bogan

Yeah. They sort of guide you and, again, qualify, I call it qualify and quantify. So are you sleepy? How sleepy are you? And then as you say, you can begin to dig down into terms of the functionality, in terms of how it's impairing someone. So in everyday practice, what would you consider an ideal approach to detect excessive sleepiness and narcolepsy and OSA patients to determine if treatment is actually indicated?

Dr. Nancy Foldvary-Schaefer:

Mm-hmm (affirmative). Well, all people should be queried about their sleep and that includes daytime sleepiness as well as how much sleep we get, because we live in a society that's sleep deprived. So it's also important to recognize insufficient sleep, right? In the differentiation of hypersomnia disorders. Again, I really like to get observers from family members, if there's observations to be had, and then I move on to the subjective assessments that we discussed, often the Epworth Sleepiness Scale, the FOSQ, and then that information to decide what's the next right step.

If the clinical suspicion of narcolepsy is high, the next right step, as long as the patient is not chronically sleep deprived, would be to proceed with laboratory testing. And that includes a polysomnogram followed by an MSLT. If obstructive sleep apnea is highly suspected, I would proceed with either polysomnography or perhaps a home sleep apnea test if the patient doesn't have comorbid conditions, and if I hear something in the history that really raises concern for either a circadian rhythm disorder or insufficient sleep, I may ask the patient to maintain a sleep log.

Dr. Nancy Foldvary-Schaefer:

This is done on a piece of paper or it can be done in a journal, or it can be done on an app on your iPhone and returned to the clinic after a few weeks before proceeding with sleep testing.

It's important really to tailor the sleep test right to the individual question. And so I think it's important to make sure you have as much clinical information as you can get before you choose to proceed with laboratory testing. And then of course, after testing, it's important to really assess, again, for daytime sleepiness and put it all in context. So in the setting of obstructive sleep apnea, people who are treated with CPAP, we should be ascertaining sleepiness across the patient's treatment period and in long-term. We check upward sleepiness scales, and every patient coming to the sleep center every time. And sometimes people respond to CPAP initially with an improvement in daytime sleepiness, but sleepiness re-emerges. And a subset of those patients could have narcolepsy perhaps, or they may be appropriate for initiating some form of pharmacotherapy.

And then of course, on the narcolepsy side, I really spend a lot of time really thinking about the results of the PSG and thinking about the results of the MSLT, making sure those tests are valid, particularly if the results don't quite match the clinical story. And then of course, after the testing confirms narcolepsy or some other CNS hypersomnia, it's important not only to discuss initiating therapy, but also discuss the expectations of therapy because sometimes these therapies take time to really take effect and in the end of the day, many patients with narcolepsy, despite optimal therapy, will continue to have daytime sleepiness and other struggles related to academic and work performance.

Dr. Richard Bogan

Yeah. I always tell my referral base, if you have someone who's tired or can't think/remember or has mood disturbance, you need to determine if they're sleepy or not. Because if they're sleepy we can find a reason and we can help that and that will help a lot of different things. So again, we need to know what state the brain is in and what are the biological processes, and the sleep study allows us to see that, if there's any pathology and the nap study is in the daytime, what does your brain do in the daytime when all these neuro-transmitters are trying to keep you awake and you remove sensory input? What does your brain do? And the nap studies oftentimes give us a clue as to what's going on. I wish we had time to talk more about pathophysiology and why these people are sleepy, that'll be another session, but Nancy, thank you for providing us with a great overview of the burden of excessive daytime sleepiness and why there is a need for early detection and treatment initiation.

Now, let's close with our smart goals that is, specific, measurable, attainable, relevant and timely goals. What should healthcare practitioners listening today take away from this podcast? They should recognize the burden imposed by EDS in pediatric and adults with obstructive sleep apnea, use evidence-based tools to improve your detection of EDS in patients with OSA or narcolepsy and identify patients in whom it is appropriate to initiate treatment for EDS.

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