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What Do Clinicians Need To Know? Utilizing Clinically Validated Diagnostic Tools to Diagnose MS Earlier

Announcer:
Welcome to CME on ReachMD. This episode is part of our MinuteCE curriculum.

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Dr. Freedman:
Hello, everyone. My name is Mark Freedman. I'm a Professor of Neurology at the University of Ottawa, and a Senior Scientist at The Ottawa Hospital Research Institute in Ottawa, Ontario, Canada. And I'm here to talk to you about what do clinicians need to know about the new validated diagnostic tools in making a diagnosis of MS.

So, it's important to consider the evolution of MS from what we are calling now the radiologically isolated syndrome right through to the progressive disease. And in this little cartoon here, you can see this what's called a clinical threshold, above which patients have symptoms, physicians can actually appreciate signs. And we know that when demyelination first occurs and it crosses the clinical threshold, we're aware that the patient has disease, we call that the clinically isolated syndrome. But if you do an MRI, you actually can find evidence of demyelination that preceded that first clinical episode. So, that is what is referred to as RIS, lesions that look like MS but are not necessarily MS.

The McDonald criteria, when it was evolving over the years to 2005, started to incorporate the fact that you can get new lesions on MRI, but you can see that they're subclinical under the threshold. And that still allowed us to make a diagnosis earlier and not having to wait for this second clinical attack. That was the key because the second clinical attack was often delayed. And that was the oldest definition of MS.

So, now what's happened is the window from making that diagnosis has shifted from what you see here, to now what we see here. And one of the concerns was, can we even shift it further to the left to CIS? I think there's evidence now that that is the case, and more people are considering CIS a form of MS. Or can we shift it even further to RIS? And that's certainly something that's under review right now.

So, the most important thing is not to put the label where it doesn't belong. You have to have signs and symptoms that are compatible with central nervous system demyelination, full stop, before we even consider applying the diagnostic criteria. If there is a better explanation for a person's particular presentation, that's the disease that's in question.

When we talk about the radiologically isolated syndrome, that's the MRI only, no symptoms suggestive of MS. The criteria have evolved; the most recent I've shown here. And more or less, it's somebody who got an MRI for whatever reason, but it wasn't because of symptoms suspicious of MS. It could have been for examination of, say, a migraine, head trauma, something to that effect.

The McDonald criteria are based on two important premises: dissemination in space throughout the nervous system and dissemination in time, meaning it evolved at different times. So, that's multiple sclerosis, areas of scarring different parts of the brain at different times. That has never changed for the diagnosis of MS. What has evolved now is the fact that you can get certain markers that indicate a time

spectrum. For instance, if you do a spinal tap and get spinal fluid that is specific for oligoclonal banding, that didn't happen the day you took the spinal tap; it's reflective of a change in the nervous system through an immune interaction that has definitely taking place months or even years before the patient presented. So, it can now substitute for this dissemination in time; you don't have to wait. And if somebody's had an early presentation with an MRI that's characteristic and you get oligoclonal bands, you've got a diagnosis, you don't need to wait.

And this is all summarized in the 2017 McDonald criteria. But there is a revision in place; I can tell you there will probably be a 2024 rendition of the same diagnostic criteria coming soon. But nevertheless, if you've had one attack and you've got lesions and now you've got enhancing and non-enhancing lesions and spinal fluid that's positive, you can make a diagnosis of MS.

Primary progressive MS is a little more difficult because this progressive neurological deterioration requires you to eliminate other possibilities. For instance, getting a spinal fluid showing oligoclonal bands, getting an MRI showing that there is no other process in the spinal cord is absolutely key. Nobody has a definition yet for secondary progressive MS, and it's probably something that's disappearing as well. So, the progressive MS, you need that progressive deterioration. You've got no other explanation and you've got other MRI supportive information.

I hope that helps you to use the validated tools that we have today for diagnosis of multiple sclerosis. And thank you so much for listening today.

Announcer:
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