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Investigating the Clinical Utility of the Multiple Sclerosis Disease Activity Test

Dr. Wilner:
According to new research featured at the joint ECTRIMS-ACTRIMS meeting, the Multiple Sclerosis Disease Activity Test is a reliable indicator of recent objective disease activity when used within an academic clinic. So how can we take this research and apply it to our own real-world clinical practice?

Welcome to *NeuroFrontiers* on ReachMD. I'm your host, Dr. Andrew Wilner. Joining me today to discuss the Multiple Sclerosis Disease Activity Test, or MSDA for short, is Dr. William Kilgo. Dr. Kilgo is the Director of the Neurology Residency Program and Assistant Professor of Neurology at the University of South Alabama College of Medicine. He is also the lead author of the study on MSDA presented at the 9th Annual ECTRIMS-ACTRIMS MSMilan2023 conference.

Dr. Kilgo, it's great to have you with us today.

Dr. Kilgo:
Thank you for having me. It's really nice to be on the podcast.

Dr. Wilner:
So to start with some background, Dr. Kilgo, please give us an overview of what the MSDA test is.

Dr. Kilgo:
Sure. So the MSDA, or the Multiple Sclerosis Disease Activity Test, is essentially a multiprotein blood test. It was developed using proteomics, looking at many different potential serum biomarkers of MS disease activity. So it contains a couple of the more common ones that we're hearing about these days, including the glial fibrillary acidic protein, or GFAP, but it also has 16 other biomarkers, and it's divided into different pathways, so looking at things like immunomodulation, neuroinflammation, myelin biology, and neuroaxonal integrity. And when you get this blood test, you get back a score from 1 to 10. The test has been clinically validated against measures of disease activity, but the most statistically significant metric they had to pit it against was gadolinium-positive lesions on an MRI. So when you get back your score, you get a statistical likelihood of that patient having MRI activity at the time of the test. So that's meant to be the clinical utility of it: to detect serum disease activity amongst patients in an ambulatory clinic.

Dr. Wilner:
Tell us a little bit about how you did the study.

Dr. Kilgo:
I was essentially one of the early adopters of this test about a year ago. I work as a solo MS specialist at the University of South Alabama, so I was looking for any kind of new clinical tools to help support my practice, and I was interested in looking back at essentially the first year of use of this test. We essentially did a retrospective analysis of clinical situations in which this test was used, and I went back and looked at the different patients, kind of breaking it down by demographics, age, disease duration, which disease-modifying therapy they were on, and if they had relevant imaging, did we have any correlation between the score on the test and conventional measures of disease activity like recent relapse, recent MRI activity, or other patient complaints like that.

Dr. Wilner:
Okay. And what did you find?

Dr. Kilgo:

We had about 90 patients who ended up going through the test over that first year, and we essentially broke it down by score. So what we're looking at was if the high score correlated with high levels of disease activity. So I had 12 high scorers, and we looked at different measures. So when you look at the high scorers, seven of them had reviewable MRIs, and they all had evidence of recent gadolinium-positive lesion activity, those ones that had MRIs that were available. When we looked at other metrics like clinical metrics, 11 of the 12 had either had a recent clinical relapse or MRI activity; if you look at both, and there was one high scorer who did not have what we consider a conventional metric of recent disease activity like gadolinium-positive lesions or a recent relapse, but that patient was postpartum and not on a disease-modifying therapy and previously using a high-efficacy treatment. So there was potential for something like rebound disease activity. We essentially found a pretty high correlation with 11 out of the 12 having some objective disease activity within an interval of the test being done.

Dr. Wilner:
For those just tuning in, you're listening to *NeuroFrontiers* on ReachMD. I'm Dr. Andrew Wilner, and I'm speaking with Dr. William Kilgo about his study on the real-world utilization of the multiple sclerosis disease activity test.

Okay. So it looks like in your academic population, the test was pretty good. So what about in my clinic? What do you think?

Dr. Kilgo:
Using this test out in real-world situations, you have to think about, for one, who should you order this test on, and when you order it and why is an important question. This population of patients that I use the test on, it wasn't really a standardized situation in which I used it. It was usually for common scenarios. Most often I think when we looked at current disease-modifying therapies on this, about a quarter of the patients were not on a treatment, so it was for a baseline metric of a patient who is maybe newly diagnosed with MS or maybe a patient who was doing well in all objective metrics and maybe having what we call a new baseline score when a patient's relatively well-controlled on their therapy. Similarly to when we might sometimes get an MRI is when I'm thinking this test might be used. There are variable ways to incorporate this test. I found a couple of interesting scenarios in a patient who maybe has a metal implant and can't have an MRI or maybe in a patient who is allergic to gadolinium and can't get a contrasted MRI scan, so I found this test to be a nice supplemental piece of data that I might otherwise be missing in certain patients.

Dr. Wilner:
Yeah. I think those indications are terrific. I've got a lot of questions for you, but I think I only have time for one, and that is can I use this test to replace the routine six-month follow-up MRI study that I usually do on my patients with relatively active MS who are being treated? What do you think?

Dr. Kilgo:
I would have a hard time confidently saying it can replace the MRI in a scenario like that. If anything, I like having more information, so I would still be inclined to get that follow-up six-month scan on a patient with highly active disease. I think just having access to more objective data for the MS patients is a win, but it remains to be seen whether it could truly replace the MRI. I don't think the MRI will ever be replaced.

Dr. Wilner:
Before we close, Dr. Kilgo, do you have any final tips on how we can use MSDA in clinical practice? Or anything else you'd like to add?

Dr. Kilgo:
I think the main thing is recognizing the limitations. This is a test that gives you a likelihood of disease activity. There will probably be situations where you'll get a disparate result sometimes, maybe an unexpected result. I've got a couple of cases where we found that the test was high before patients had a relapse or the score was high before the patient had an MRI, so we would attain an MRI sooner. There are a lot of different potential uses for a test like this, but finding the right time and when to order the test I think is the most important question, but I do plan on using it routinely.

Dr. Wilner:
With those final comments in mind, I want to thank my guest, Dr. William Kilgo, for joining me to share the results from this study of the Multiple Sclerosis Disease Activity Test. Dr. Kilgo, it was a pleasure having you on the program.

Dr. Kilgo:
Thank you very much. I appreciate it.

Dr. Wilner:
For ReachMD, I'm Dr. Andrew Wilner. 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.