

Transcript Details

This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: <https://reachmd.com/programs/neurofrontiers/metabolomics-in-multiple-sclerosis-advancing-diagnosis-prognosis-and-treatment-response/32373/>

ReachMD

www.reachmd.com
info@reachmd.com
(866) 423-7849

Metabolomics in Multiple Sclerosis: Advancing Diagnosis, Prognosis, and Treatment Response

Announcer:

You're listening to *NeuroFrontiers* on ReachMD. On this episode, we'll hear from Dr. Pavan Bhargava, who's an Associate Professor of Neurology and Co-Director of the Autoimmunity Center of Excellence at Johns Hopkins University School of Medicine. He'll be discussing research on how metabolomics can help diagnose and stage multiple sclerosis, or MS. Here's Dr. Bhargava now.

Dr. Bhargava:

Several studies have attempted to use metabolomics as a tool for both diagnosis and prognosis in MS. I'll talk about the diagnostic piece first. One of the issues with the current studies that have been done using metabolomics is that they utilize several different platforms to evaluate the metabolome. This results in the identification of different numbers and types of metabolites, and so it is often hard to compare across these different studies. So in small studies, people have shown the ability of metabolomics to improve diagnostic accuracy when added to current diagnostic criteria. However, in several large studies, we have not been able to identify a specific diagnostic signature in the metabolome of MS, especially when you compare MS to other neuroinflammatory, neuroinfectious, or demyelinating disorders.

We have used and others have used metabolomics to also try to stage the disease. We have noted and others have seen that there are specific metabolites that may be associated with a better or worse prognosis. So for example, we have seen elevated levels of certain active lipids, such as ceramides, are associated with worse outcome, as defined either by clinical outcomes or imaging outcomes, both with retinal or brain atrophy. And so specific metabolite signatures could help us in identifying those who may have a poor long-term prognosis, and this could help us in stratifying people for inclusion in clinical trials or for determining what medication or intervention to use.

So several studies have looked at the change in the metabolome with existing disease-modifying therapies and have identified signatures of response as well as signatures that might signal adverse effects. So for example, we found changes in specific fatty acid levels with dimethyl fumarate were predictive of development of lymphopenia, which is an important side effect of this medication. So metabolomics may help us identify early which patients may have a benefit from a specific therapy or may have adverse effects with that therapy.

Announcer:

That was Dr. Pavan Bhargava, talking about how metabolomics could help diagnose and stage multiple sclerosis. 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!