The Clinical Neuropsychiatry of Multiple Sclerosis

By Anthony Feinstein, MPhil, PhD, MRCPsych, FRCPc

Multiple sclerosis (MS) is the most common cause of neurological disability in young and middle-aged adults. Although Charcot noted behavioral changes associated with MS, nearly a century would elapse before researchers began defining their full extent and severity. Broadly speaking, abnormalities may be divided into those of mood and cognition. Many patients are afflicted with both and it is essential that clinicians are not only aware of this but understand how to detect problems and provide treatment.

The lifetime prevalence of major depression in MS patients approaches 50%. As Scott B. Patten, MD, and colleagues note, these data came from specialist clinics with the potential for ascertainment bias. Shifting their inquiry into a large community-based sample, they report that the rates of mood disorder remain elevated largely in younger MS patients. While it is partly reassuring to find that aging comes with at least one benefit, the gist of this study is to reinforce the message that clinically significant depression is a problem for MS patients. Not only does it adversely affect quality of life and lead to increased suicidal thinking, it exerts more subtle deleterious effects as Peter A. Arnett, PhD, reveals. In a longitudinal study exploring the relationship between depression and cognition, Arnett reports that MS patients with prominent evaluative symptoms of depression (ie, feelings of inferiority, failure) have greater difficulty with cognitive tasks that encompass information processing speed and executive function linked to working memory. A preoccupation with negative thoughts may reduce the cognitive capacity necessary for aspects of attention and working memory.

These data complement the review article of Ralph H.B. Benedict, PhD, ABPP-CN, that focuses on methods of detecting cognitive dysfunction in MS. As with mood disorders, impaired cognition has been linked to difficulties with work, relationships, and, in more extreme cases, basic activities of daily living. Usually, the more subtle pattern of deficits associated with demyelination differ from those seen in cortical-type dementia and will be missed should clinicians rely on screening instruments like the Mini-Mental State Examination. At the same time, the method of choice for eliciting deficits, namely neuropsychological testing is expensive and frequently not readily available. This has meant that alternative instruments, like the Multiple Sclerosis Neuropsychological Screening Questionnaire, assume an added prominence. With good sensitivity, specificity, and ease of administration this informant based scale makes a useful addendum to the neurological examination. It is in the same light that the magnetic resonance imaging (MRI) rating scale by Laury Chamelin, MD, FRCPc, and colleagues should be viewed.

In many ways this is a throwback to the early days of clinical MRI. In the 1980s, before the development of sophisticated computer algorithms that could compute lesion volume in addition to indices of parenchymal loss, rating scales were relied upon to quantify brain changes. Relatively unsophisticated, they involved the researcher measuring the diameter of lesions from a hardcopy of the image and then weighting the measurement according to a specified protocol. The lack of sensitivity of this approach meant that cognition-brain correlates were at best modest while depression-brain correlates were seldom if ever noted. The advantage to this technique was that, like the Multiple Sclerosis Neuropsychological Screening Questionnaire, it was easy to use. Chamelin and colleagues have resurrected this methodology but applied it in a far more selective fashion by targeting brain slices rich in cholinergic pathways. The result is a method that offers promise as a clinically useful predictor of cognitive dysfunction.

Much has been learned about the behavioral abnormalities associated with MS over the past 2 decades. What is needed now is to translate these advances into improved clinical care for patients. To reduce the morbidity associated with low mood and impaired cognition it is imperative for research and education to guide clinical practice. The evidence, presented here, suggests this is starting to occur.

REFERENCES


Dr. Feinstein is professor in the Department of Psychiatry at the University of Toronto in Canada.
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- Patients should be advised to keep their healthcare provider informed about their use of PARCOPA*.

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