benefits. It will identify those with early significant cognitive impairment, at increased risk of fast disease progression. It will alert MS clinic staff to those people with MS who have evidence of objective cognitive impairment and who require more support in disease management. Avoiding one urinary infection will easily save the cost of a few annual BICAMS assessments. By introducing annual BICAMS assessments for people with MS and responding appropriately to the findings, people with MS will have more information about their disease, more control over its impact and reduced risk of morbidity. It is not beyond most neurologists to achieve this.

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A useful annual review of cognition in relapsing MS is beyond most neurologists – Commentary

Michael Hutchinson

The dark ages: the stage of ignorance
At one stage, we were all very keen on the concept of benign multiple sclerosis (MS), which is now agreed to be a relatively uncommon phenomenon.1 I remember one particular patient 25 years ago who developed what appeared to be a relatively mild form of MS at
10–15 years follow-up. At that stage, I can recall reassuring her that she had a benign form of MS. In 1993, her husband, who attended the clinic with her, had noted that she was a perfect car driver unless she started a conversation when she clearly lost concentration and, at one stage, had an accident. He said, ‘She could not talk and drive at the same time’. He also remarked that he had noticed increasing problems with memory and concentration in the previous few years, so that he was becoming increasingly alarmed and restricted her driving. Cognitive assessment at that time by a Clinical Neuropsychologist showed evidence of significant defects in memory and information processing. This progressed inexorably so that 5 years later she had a frank dementia; I attended her funeral 2 years ago; she died at the age of 58 having been severely restricted by her dementia for 10–12 years. It was probably at that stage, in 1993, that I became convinced of the need to assess cognition in MS patients. However, this appeared to be not possible unless one had access to a clinical neuropsychologist who would take at least 3 hours to assess an individual patient. Even in a provincial university teaching hospital, this was impossible to justify financially. My first wife started a PhD on the subject but died before it could be completed.2

Enlightenment from Florence (again)
The importance of assessing cognition at all stages of MS has been emphasised by a series of papers from the Italian group led by Maria Pia Amato and colleagues.3–6 These papers demonstrated (among other findings) that patients with apparently benign MS after 18 years of illness could be subdivided into two groups: those with intact cognition and those with cognitive impairment. The latter group, when followed for the next 5 years, showed marked deterioration in their disability levels, whereas the relatively benign group with intact cognition remained stable. The anatomical basis for the pathological process is the otherwise silent grey matter atrophy affecting both the cortex and deep grey matter structures.

Cost and utility of cognitive assessment
Economic factors in health service provision have not improved over the last 10 years and it is difficult to justify the employment of a full-time clinical neuropsychologist in any medium-sized single academic neurology unit. Thus, the introduction of brief measures of cognitive assessment into clinical MS practice is to be welcomed. The ‘desert–island’ test, if only one test were available, would be the Symbol-Digit Modality Task. The instruments most often recommended are Brief International Cognitive Assessment for MS (BICAMS)7 and the Brief Repeatable Neurological Battery of Rao.8 However, while they are relatively brief (compared to the time taken by a Clinical Neuropsychologist), they certainly require at least another 30 minutes with an individual patient and needed some training in both execution and assessment of the results. While our clinical Research Registrar has both the time to perform the test and to become expert in its performance and scoring, none of her Consultant Neurologist colleagues have been performing the test in their everyday clinical practice. An ideal assessment of cognition, which would be of use in a busy neurological practice would (a) be self-completed by the patient prior to the consultation, (b) be scored by an automatic computerised programme and (c) produce a meaningful result available to the Consultant Neurologist at the time of the clinical consultation. Given the nature of repeated testing and practice effects, alternate forms of the test would need to be available. Thus, while I applaud the efforts of academic Clinical Neuropsychologists, notably Dawn Langdon, Maria Pia Amato, Ralph Benedict among others, to produce a cognitive measure, which might be used routinely in the clinic, I do not think we are quite there yet. There is also the argument, ‘what is the point in measuring cognition if you cannot do anything about it’.9 This is clearly a relatively nihilistic approach. We do now have at this stage a good range of medications, so that we can escalate therapies if we do not feel that we are controlling the disease properly.

Would magnetic resonance imaging measures not be of more use to the clinician?
It could be argued that sensitive magnetic resonance imaging (MRI) measures of cerebral atrophy, and in particular grey matter atrophy, would be of greater long-term use to the clinician. As has been noted in a number of previous ‘Controversies’, we do need to measure progressive grey matter disease, which is essentially silent until decompensation occurs. It could be argued that the institution of regular annual MRI measures of both white matter and grey matter disease including an annual report of percentage brain volume change would be a much more practical way of detecting poorly controlled disease activity.10 Thus, while the work of academic Clinical Neuropsychologists has been of enormous importance in highlighting the effects and consequences of hidden grey matter disease, I suspect that on a cost–benefit analysis, because patients are already having annual MRI scans, the addition of serial volumetric measures would be both more sensitive and effective (than cognitive assessment) in detecting uncontrolled disease activity and indicating a need for change in therapy.
Dawn Langdon quite correctly indicates that we need to be able to measure cognitive abilities so that we can be aware of the impact of cognitive deficits on the patient in relation to the personal management of their MS. Perhaps if, as she indicates, the development of an iPad version of BICAMS supervised by and scored by an MS nurse specialist is likely in the near future, then it might be possible to incorporate this also in MS specialist centres on a routine annual basis for all our patients.

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