

## **All relapsing multiple sclerosis patients should be managed at a specialist clinic- YES**

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Past generations of neurologists frequently took the approach of “diagnose and adios” to managing patients with multiple sclerosis (MS). It is now generally accepted that MS is a chronic but treatable illness that requires long-term care from a neurologist. A recent study examining healthcare utilization in the United States found that although routine neurological care for MS was more expensive than primary care alone, there was a decrease in hospital admissions and emergency department visits.<sup>1</sup> The role of neurologists in managing MS is reflected in recent National Institute of Health and Care Excellence (NICE) guidelines in the United Kingdom that recommend annual neurological review for all people with MS.<sup>2</sup>

Relapsing-remitting MS (RRMS) has seen major changes over the last 20 years with new diagnostic criteria and new therapeutic options. The management of RRMS patients is becoming more complex and challenging because of the need to diagnose MS early and accurately, the recommendation to initiate treatments early and consider treatment escalation, the need to identify and treat co-morbidities and consider symptomatic treatments. All RRMS patients should have access to a specialist MS clinic, so that they can benefit from an effective management plan, which will maximise their quality of life and improve long-term outcomes. We will now discuss in more details the aspects of the disease, which we suggest should be managed at a specialist clinic.

A referral to a specialist MS clinic offers an opportunity to ensure the diagnosis of MS is correct. The rate of misdiagnosis of MS may be as high as 5-10%.<sup>3</sup> The misdiagnosis of MS has a significant impact on patient care (misdiagnosed patients are often treated with disease-modifying treatments<sup>4</sup>) and the costs of the health care system. The most common alternative diagnoses in people misdiagnosed with MS are non-specific white matter abnormalities, small vessel disease and migraine.<sup>3, 4</sup> This suggests both an inappropriate use of imaging criteria to diagnose MS<sup>5</sup> and an erroneous interpretation of MRI scans.<sup>3</sup> To

ensure that the diagnosis of MS is correct, clinical symptoms, neurological signs, and MRI findings must be correctly interpreted by an MS specialist neurologist and a neuroradiologist, who is an essential component of a specialist MS service. Making an accurate diagnosis of MS has become even more important with the advent of highly-effective treatments and the consequences of misdiagnosis can be severe; a number of MS therapies exacerbate neuromyelitis optica spectrum disorder<sup>6</sup>, while one of the first patients reported with natalizumab-associated progressive multifocal leukoencephalopathy (PML) did not have evidence MS at autopsy.<sup>7</sup>

Once a diagnosis of RRMS is confirmed, it is necessary that the newly diagnosed patient receive emotional support and the information relevant to the management of their disease.<sup>8</sup> These two elements are important for patient satisfaction about the communication of the diagnosis of MS.<sup>8</sup> A discussion of management should incorporate advice about lifestyle factors, including smoking cessation, since this will reduce their risk of comorbidities and long-term disease progression.<sup>9</sup> This holistic approach to the communication of the MS diagnosis requires time and care, and can only be provided by a specialist MS clinic, involving an MS specialist nurse. If patients accept their disease better and take an active part in deciding the goals of treatment and formulating a management plan, it is more likely that they will be adherent and will have a better quality of life.

A disease-modifying therapy is considered in patients with clinical and/or radiological evidence of active disease. There are now 13 FDA-approved treatments for RRMS, including five agents approved in the last five years alone. These agents have differing mechanisms of action, efficacy and safety profiles. Staying on top of the volume of data from clinical trials and post-marketing studies is challenge for even the most seasoned MS specialist and probably near impossible for a general neurologist. Comparisons between the

results of the clinical trials, which may have an impact on the choice of the disease-modifying drug, need to be done with caution and by an MS specialist neurologist. The multitude of treatment options makes counselling patients on the risks and benefits of treatment a complex and sometimes lengthy process. An MS specialist nurse, who may not be available to neurologists working in the general neurology setting, can support the process of treatment choice and initiation.

A number of the recently approved treatments for RRMS are more efficacious than the established injectable agents, but are associated with potentially serious adverse effects, such as opportunistic infections and secondary autoimmunity. Because of the potential for severe, and even life-threatening complications, these treatments require much more intensive monitoring. For example, monthly blood tests and urinalysis in patients treated with alemtuzumab and 4 – 6 monthly surveillance MRI scans in natalizumab treated patients at high-risk of PML. For patients to be treated with these agents safely a well-organised monitoring system is required that will usually require a multi-disciplinary team including neurologists, MS nurses, pharmacists and neuroradiologists that is best delivered through a dedicated specialist clinic.

Optimal management of RRMS extends beyond disease-modifying treatments. People with MS have chronic neurological symptoms that are often unpleasant and impact on physical, social and occupational functioning.<sup>10</sup> Symptomatic treatments that target key symptoms, such as fatigue, bladder disturbance and ambulatory dysfunction, require co-ordinated multi-disciplinary care from a range of health care professionals. A multi-disciplinary team can also evaluate the need for physiotherapy and rehabilitation. Attention to co-morbidities is also an essential part of MS care. Co-morbidities in people with MS is associated with an increased

risk of death<sup>11</sup> and hospitalizations<sup>12</sup> and need to be actively managed. An MS specialist clinic is ideally placed to provide holistic MS care.

There has been relatively little investigation of the benefits of sub-specialist care for people with RRMS. An area that has been studied is relapse clinics, where people with RRMS can self-refer for rapid assessment of new neurological symptoms. Relapse clinics have been shown to both decrease hospital admissions, but also reduce psychological distress in patients experiencing a relapse.<sup>13</sup> There is much evidence from other disease areas that specialist care improves outcomes. Among neurological diseases, admission to a specialist stroke unit improves functional outcomes<sup>14</sup> and reduces mortality in patients with acute stroke, while specialist multidisciplinary care improves survival in motor neurone disease.<sup>15</sup> In surgical specialties patient volume is an established predictor of perioperative complications and death in patients undergoing elective surgical procedures.<sup>16</sup>

There are few areas of medicine that have seen such rapid advances in recent years as the changes that have occurred in the diagnosis and management of RRMS. Given the current, and likely increasing, complexity of managing RRMS access to well-resourced, specialist MS services is essential to effectively monitor and treat our patients and optimise long-term outcomes.

## **Disclosures**

Wallace Brownlee has nothing to disclose. Olga Ciccarelli is a consultant for Novartis, Biogen-Idec, Genzyme and General Electric, and all the payments are made to the UCL Institute of Neurology. She is an associate editor of *Neurology*.

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