The reality of multiple sclerosis assessment in middle-income countries

The Position Paper by Mike Wattjes and colleagues[1] recommends frequent monitoring of patients with multiple sclerosis using MRI. However, in middle-income countries such as Brazil, the reality is that there is low availability of neuroimaging for the diagnosis and monitoring of patients with neurological diseases. Outpatients might wait for months, and in some cases, never obtain neuroimaging through the public health-care system, or they have to pay for private health care, with prices that are unaffordable for a great number of people. The need for anaesthetic sedation of patients largely precludes the use of MRI in children because of the high cost of anesthesia in both the public and the private health-care systems. We did a short online survey of 150 neurologists in Brazil. When asked "Do you think that performing MRI is a problem for patients (whether due to cost or other reasons)?", 19 (32%) of 60 respondents answered "frequently", and 33 (55%) answered "sometimes" (appendix p 2).

Finding alternatives to MRI for diagnosis and monitoring that can improve the care of our patients is a necessity. Despite the low specificity and low topographic resolution of evoked potentials, their high sensitivity to neural alterations is particularly promising, as even subclinical impairments in nerve conduction can disrupt wave latency, wave magnitude, and waveforms.[2–4] However, the rise of neuroimaging with higher specificity and spatial resolution than evoked potentials has allowed the location of lesions to be determined much more accurately and has significantly improved the diagnosis of neurological disorders, including multiple sclerosis.[2] Therefore, evoked potentials have been losing ground despite their high sensitivity to demyelinating diseases.

Neuroimaging is irreplaceable in obtaining a specific diagnosis in neurology. However, patients with an established diagnosis of multiple sclerosis or optic neuritis might benefit from a follow-up using evoked potentials, given that these examinations are easier and cheaper than MRI, and are sensitive to changes in the functional state of the nervous system. Around 30 years after the rise of high-resolution neuroimaging, evoked potentials have been proposed to show a stronger association with clinical symptoms than neuroimaging.[5] In our survey, when asked whether they use evoked potentials, 34 (57%) neurologists replied that they do or would adopt this exam in their general practice (appendix p 2).

We therefore call for new clinical techniques and studies using evoked potentials, in the hope that future recommendations for the diagnosis and monitoring of people with multiple sclerosis can include this approach in patient follow-up.

DMA and PRG are developing a new technology for recording and analysing evoked potentials in the diagnosis of neurological diseases. All other authors declare no competing interests.

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Authors' reply

With great interest we read the Correspondence in response to our Magnetic Resonance Imaging in Multiple Sclerosis (MAGNIMS), Consortium of Multiple Sclerosis Centres (CMSC), North American Imaging in Multiple Sclerosis Cooperative (NAIMS) recommendations on the use of MRI in multiple sclerosis.[1]

We would like to thank Dimitri Marques Abramov and colleagues for bringing to light an important issue in the care of people with multiple sclerosis—the concern about limited access to neuroimaging facilities, particularly MRI, for the diagnosis and monitoring of people with neurological diseases in countries with developing economies.

This concern is certainly relevant in multiple sclerosis monitoring, for which there is compelling evidence that brain (and occasionally spinal cord) MRI should be done yearly, at least in patients receiving a disease-modifying drug, for monitoring of treatment effectiveness and prediction of treatment response, and for monitoring of drug safety. This annual interval could be extended in patients who are clinically stable after the first few years, particularly if monitoring of drug safety is not required, and in patients for whom MRI assessment of disease activity would not have any effect on their therapeutic management.

See Online for appendix

According to the MAGNIMS-CMSC-NAIMS recommendations,[1] an abbreviated protocol with high-quality three-dimensional fluid-attenuated inversion recovery and, in some cases, gadolinium-enhanced T1-weighted sequences, is generally sufficient for monitoring purposes. This shortened protocol can be obtained in less than 15–20 min and can be implemented more easily than the full MRI protocol used for diagnostic purposes.