LETTER TO EDITOR

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Radiologically Definite Multiple Sclerosis as a New Terminology in Demyelinating Disease

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Dear Editor

Multiple sclerosis (MS) is the most common inflammatory demyelinating disease of the central nervous system. MS is characterized by dissemination in time and place. Dissemination can be clinically (clinically definite multiple sclerosis) or radiologically by magnetic resonance imaging (MRI). Correct diagnosis of MS needs dissemination both in time and in place and also exclusion of all other neurological diseases that can mimic MS. Clinically, dissemination in time is defined as two episodes of neurological symptoms occurrence, separated at least one month apart, and dissemination in place is characterized as the presence of symptoms or signs in at least two different parts of central nervous system (CNS) (e.g. visual, sensory, motor, etc.). Radiologically dissemination in space (DIS) was defined as the presence of clinically silent lesions in T2-weighted MRI in two of four locations including juxtacortical, preventricular, infratentorial, and spinal cord and dissemination in time (DIT) as the presence of simultaneous gadolinium enhancing and non enhancing lesions in MRI [1,2].

There are some terminologies which are frequently used in patients with demyelinating disorders including clinically definite MS (CDMS), clinically isolated syndrome (CIS) and radiologically isolated syndrome (RIS) [1-3]. CDMS is defined as two attacks of neurological symptoms in two different neurological systems (e.g. optic neuritis and myelitis) separated and apart for at least one month [1]. Radiologically isolated syndrome (RIS) was used in persons with MRI findings suggestive of MS without typical symptoms and signs [3].

CIS is defined as the first episode of neurological symptoms and signs suggestive of MS. The onset of MS in 85% of patients presents as CIS. This terminology is widely used in clinical practice. By definition, CIS is always clinically isolated in time. Around 50-70% of patients with CIS have white matter lesions in brain or spinal MRI. On the other hand, CIS usually represents a wide clinical spectrum of diseases of CNS and can be present in a multitude of clinical manifestation [1,2].

At present time, MRI is the most important tool for diagnosis of MS in patients with CIS and the application of MRI for diagnosis of MS has been increased during the past few years [4]. Today, the diagnosis of MS is possible

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very earlier than before due to the wide integration of MRI in McDonalds' criteria (2010). MacDonald's criteria mostly rely on MRI findings to facilitate the early diagnosis of MS [1,4]. By using the new MacDonald's criteria some patients who presented with CIS can be diagnosed as MS if MRI fulfills dissemination in time and space. For patients who fulfill the criteria of both DIT and DIS, the term of CDMS is used; but for patients who have had one attack of neurological symptoms and fulfill DIT and DIS radiologically (by MRI) there is no appropriate terminology and all of them are classified as CIS [2,4]. We know that this terminology is somewhat ambiguous, because CIS may be the first presentation of many neurological diseases including demyelinating diseases, inflammatory diseases such as vasculitis or non-inflammatory non-demyelinating diseases like vascular lesions [2].

We recommend the term of radiologically definite MS (RDMS) for patients who have had one attack of neurological symptoms and fulfill DIT and DIS radiologically by MRI. Because many neurologists are not completely familiar with the term CIS and some are confused about it, we need an appropriate terminology to use in every day's clinical practice. Also, early diagnosis of MS in patients with CIS is very important. Because early treatment of patients with CIS by disease modifying drugs including Beta-Interferon can delay turning into CDMS and also decreases brain atrophy and new brain lesions. All current disease modifying drugs have been shown to be effective in treating CIS [5]. But it is clear that all patients with CIS do not require these treatments and only those patients who show dissemination in time and space by MRI should be treated by these agents [2,6].

In conclusion, radiologicaly definite MS (RDMS) is the recommended terminology for patients who have one attack of neurological symptoms and radiologically fulfill DIT and DIS criteria and these patients should be treated by disease modifying agents as well.

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