Radiologicaly definite multiple sclerosis as a new terminology in demylinating disorder

Sadegh Izadi, MD.

Department of Neurology, Medical School, Shiraz University of Medical Sciences, Shiraz, Iran

Tel: 0711-6121065

Fax: 0711-6121065

Email:izadisad@sums.ac.ir

Dear editor:

Multiple sclerosis is the most common inflammatory demylinating disease of central nervous system. There are some terminologies which frequently used in patients with demylinating disorders including clinically definite MS (CDMS), clinically isolated syndrome (CIS) and radiologically isolated syndrome (RIS).

Ms is characterized by dissemination in time and place. Dissemination can be clinically (clinically definite multiple sclerosis) or radiologicaly by magnetic resonance imaging( MRI).correct diagnosis of ms needs dissemination both in time and in place and also exclusion of all other neurological disease which can mimic MS. clinically dissemination in time defines as two episode of neurological symptom separated at least one month apart and dissemination in place characterized as presence of symptom or sing in at least two different CNS system (e.g. visual, sensory, motor). Rradiologicaly dissemination in space (DIS) was defined as 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 presence of simultaneous gadolinium enhancing and non enhancing lesions in MRI.1

Radiologically isolated syndrome (RIS) was used in persons with Magnetic resonance imaging findings suggestive of multiple sclerosis without typical multiple sclerosis symptoms and signs.2

Clinically isolated syndrome defines as first episode of neurological symptom and sign suggestive of MS. The onset of MS in 85% of patients present as clinically isolated syndrome. This terminology widely used in clinical practice. By definition CIS is always clinically isolated in time. 50-70% of patients with CIS have white matter lesions in brain or spinal MRI.in the other hand, CIS usually represent a wide clinical spectrum of diseases of CNS and can 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 Broad application of MRI for diagnosis of MS increased during past few years.3

Now it is possible to diagnose MS very earlier than past due to widely integration of MRI in 2010 McDonalds’ criteria and in many instances MRI criteria were used instead of clinical criteria. 2010 MacDonald’s criteria rely mostly on MRI findings to facilitate early diagnosis of MS.4

By using new MacDonald’s criteria some patients who presented as CIS can be diagnosed as MS, if MRI fulfills dissemination in time and space. For patients who have clinically DIT and DIS term of clinically definite MS is used, but for those patients who radiologically have DIT and DIS there is no appropriate terminology. At present time there is no clear terminology for these patients and all of them classified as CIS. we know that this terminology is to some what ambiguous, because CIS may be the first presentation of many neurological disease including Demylinating disease ,inflammatory disease like vasculitis or non inflammatory non Demylinating disease like vascular lesions.

We recommend term of radiologicaly definite MS (RDMS) for these patients. Because many neurologists are not completely familiar with term of CIS and some are confused about it and in the other hand we need an appropriate terminology to use in every day clinical practice.

Also correct early diagnosis of MS as soon as possible in patients with CIS is very important. Because treatment of patients with CIS with disease modifying drugs including beta interferon delays conversion to clinically definite ms and also decreased brain atrophy and new brain lesions .All current disease modifying drugs have been shown to be effective in treating CIS.5But, it is clear that all patients with CIS do not require these treatments and only those patients who full fill dissemination in time and space by MRI should be treated by disease modifying drugs. 2, 6

In conclusion, we suggest that by applying this new terminology (radiologicaly definite MS) in clinical practice and researches it is possible to overcome some ambiguous aspects of patients with clinically isolated syndrome.

1. David H Miller, Declan T Chard, Olga Ciccarelli.[Clinically isolated syndromes](http://www.sciencedirect.com/science/article/pii/S1474442211702745) .The Lancet Neurology, Volume 11, Issue 2, February 2012, 157-169.

2. Arnaud Charil, Tarek A Yousry, Marco Rovaris, Frederik Barkhof, Nicola De Stefano, Franz Fazekas, David H Miller, Xavier Montalban, Jack H Simon, Chris Polman, Massimo Filippi. [MRI and the diagnosis of multiple sclerosis: expanding the concept of “no better explanation”](http://www.sciencedirect.com/science/article/pii/S1474442206705725). *The Lancet Neurology*, *Volume 5, Issue 10*, *October 2006*, *841-852.*  
3. Mohammad Ali Sahraian, Arman Eshaghi. [Role of MRI in diagnosis and treatment of multiple sclerosis](http://www.sciencedirect.com/science/article/pii/S0303846710000934).  
*Clinical Neurology and Neurosurgery*, *Volume 112, Issue 7*, *September 2010*, *609-615*

4. Arie Gafson, Gavin Giovannoni, Christopher H. Hawkes.[The diagnostic criteria for multiple sclerosis: From Charcot to McDonald](http://www.sciencedirect.com/science/article/pii/S2211034811000058) .Multiple Sclerosis and Related Disorders, Volume 1, Issue 1, January 2012, 9-14.  
5. [Rinsho Shinkeigaku,[Tanaka M](http://www.ncbi.nlm.nih.gov/pubmed?term=Tanaka%20M%5BAuthor%5D&cauthor=true&cauthor_uid=23166826), [Motoyama R](http://www.ncbi.nlm.nih.gov/pubmed?term=Motoyama%20R%5BAuthor%5D&cauthor=true&cauthor_uid=23166826), [Tahara M](http://www.ncbi.nlm.nih.gov/pubmed?term=Tahara%20M%5BAuthor%5D&cauthor=true&cauthor_uid=23166826), [Tanaka K](http://www.ncbi.nlm.nih.gov/pubmed?term=Tanaka%20K%5BAuthor%5D&cauthor=true&cauthor_uid=23166826). [Brain MRI findings in Japanese patients with clinically isolated syndrome.](http://www.ncbi.nlm.nih.gov/pubmed/23064621)](http://www.ncbi.nlm.nih.gov/pubmed) 2012; 52(10):725-9.

5. Irina Elovaara. [Early treatment in multiple sclerosis](http://www.sciencedirect.com/science/article/pii/S0022510X11700053) .Journal of the Neurological Sciences, Volume 311, Supplement 1, December 2011, S24-S28.

6. Hayrettin Tumani, Irina Sapunova-Mayer, Sigurd D. Süssmuth, Valerie Hirt, Johannes Brettschneider.[CIS case studies](http://www.sciencedirect.com/science/article/pii/S0022510X09712948) .*Journal of the Neurological Sciences*, *Volume 287, Supplement 1*, *December 2009*, *7-10.*

*.*