Background
During diagnosis of multiple sclerosis (MS) there are atypical clinical and imaging findings regarded as warning signs and called “Red flags (RFs)”. However, current clinical diagnostic criteria allow diagnosing patients with RFs as cases with MS when no other suitable diagnosis is difficult. Even MS experts gave inconsistent diagnosis to cases with demyelinating disorders with atypical features of MS. Some experts diagnosed such cases as MS, but others did not. In addition some experts diagnosing those as made a decision not to use Disease Modifying Drug (DMD) as their treatment.

Purpose
In this study, we diagnosed those with RFs as MS with RFs (RF-MS) when no other diagnosis applicable. To address a question whether patients with RF-MS responded to interferon (IFN)-beta or to corticosteroid (CS) and/or Immunosuppressants.

Method

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Clinical and Radiological RFs

Clinical RFs
1. atypical features of optic neuritis, spinal lesions
2. encephalopathy, seizures, impaired high-order function at onset or early phase.
3. CSF findings: remarkable pleocytosis, remarkable elevation of protein.
4. high titer of autoantibody or existence of anti-neuronal antibody

Radiological RFs
1. atypical features of optic neuritis, spinal lesions
2. encephalopathy, seizures, impaired high-order function at onset or early phase.
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4. high titer of autoantibody or existence of anti-neuronal antibody

RFs and therapeutic reactivity of IFN-beta

RFs and therapeutic reactivity

IFN-beta responder
(n=28)
Total (n=54)
p
RFs (+) (n=13) 23 (60%) 24 (44%) 0.002
RFs (-) (n=25) 24 (44%) 24 (44%) 1.000

Discussion

IFN-beta, a representative MS-DMD, was not effective to RF-MS. Thus, it is likely that presence of RFs indicates etiology of RF-MS distinct from that of MS without RFs.

Conclusion

The presence or absence of RFs in MS was useful for predicting therapeutic reactivity.