

Oligoclonal bands and MRI in clinically isolated syndromes: predicting conversion time to multiple sclerosis

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Abstract The objective of the study was to evaluate whether the presence of oligoclonal bands (OB) adds information in predicting CIS conversion to clinical definite multiple sclerosis (CDMS) and conversion time to CDMS. From 1998 to 2006, CIS patients were included in a prospective study. Patients underwent brain MRI and OB determination within 2 months of the first demyelinating event. We analyzed conversion to CDMS and time to conversion to CDMS according to abnormal MRI and the presence of OB. Forty patients were included. Fifteen patients (37%) converted to CDMS; 14 of them (93.3%) had abnormal baseline MRI ($P = 0.01$, RR = 5.9; 95% CI 1.3–10.1) and 13 (86.7%) had positive OB in CSF ($P = <0.01$, RR = 5.3; 95% CI 1.6–9.5). The risk of conversion to CDMS in patients with positive OB and abnormal baseline MRI was significantly higher compared to patients negative for both tests or with only one positive (RR = 9.1; 95% CI 3.5–14.6). Time to conversion to CDMS was 6.8 ± 3.5 months for patients with OB and abnormal baseline MRI and 19 ± 14 months for patients with only one abnormal test. CIS patients with abnormal baseline OB in CSF have a higher risk for developing CDMS. Regarding conversion time to CDMS, when abnormal MRI was added to positive OB, patients converted faster (mean time, 6 vs. 19 months). This information may be useful when considering treatment in CIS patients.

Keywords Clinically isolated syndromes · Multiple sclerosis · Oligoclonal bands · Magnetic resonance image

Introduction

Approximately 90% of patients with multiple sclerosis (MS) initially present with a clinically isolated syndrome (CIS) but convert to clinically definite MS (CDMS) when they develop a second attack [1, 2].

It is important to identify patients at high risk of conversion to CDMS, as early immunomodulatory treatment has the potential to delay conversion [3, 4].

MRI is a useful tool in CIS patients, both to exclude other diseases and to establish the risk and probability of developing MS [5, 6]. CIS patients with an abnormal cerebral MRI at presentation have a substantially higher risk of conversion to CDMS than those with a normal cerebral MRI.

Recent investigations have shown that the presence of oligoclonal bands (OB) in cerebrospinal fluid (CSF) seems to double the risk of a second attack independently of MRI [5].

The aim of the present study was to evaluate whether the presence of OB increases the risk of developing MS after a first attack and if OB and MRI adds information in predicting CIS conversion and conversion time to CDMS.