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Oligoclonal band positive and negative multiple sclerosis: do they represent clinically distinct subgroups of multiple sclerosis?

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The oligoclonal band test is an important investigation which aids diagnosis of Multiple Sclerosis (MS). Isoelectric Focusing (IEF) and immunoblotting is the gold standard method for OCB detection according to current consensus. In a typical western MS population, 95-98% of patients are positive for OCB, reflecting an intrathecal antibody response parallel to the central nervous system inflammatory pathology. A genetic basis for this discrepancy has been reported in a number of studies. OCB positive patients are associated with HLA-DRB1*15 and negative with HLA-DRB1*04, suggesting the possibility of immunogenetically different subgroups that may have a different disease course, and outcome status with varied drug response and possibly prognosis. Therefore, the relationship of OCB status has been studied in relation to clinical presentation and outcome in patients with MS, but still the relationship remains unclear.

Thus, the objective of this study was to compare between OCB positive and negative MS populations in terms of clinical, demographic and investigation findings

Thirty one definite MS patients diagnosed using McDonalds criteria were included in the study. Clinical and MRI features were documented and analyzed to compare between OCB positive and negative groups. All were tested for OCB in both serum and CSF samples.

Of the 31 MS patients, 14 (45.2%) were positive for OCB whereas 17 (54.8%) were negative. Comparison of demographic features (i.e. gender, nationality), clinical subtype frequency (i.e. relapsing- remitting, secondary progressive or primary progressive MS), disease course and disability (EDSS) revealed no significant difference between OCB positive and negative groups. Similarly, comparison of clinical features (i.e. cerebral sensory, cerebral motor, cerebellar, etc.) revealed no significant difference. However, on comparison of MRI features, the presence of cervical cord lesions were significantly higher among the OCB positive group ($p<0.01$). The rest of the imaging features were not different between groups.

In conclusion, there are no major differences in presentation and clinical course of OCB positive and negative subgroups of MS. Yet, there are some differences seen in MRI findings reflecting an association between MS immunopathology and radiological manifestations of Sri Lankan MS. This might facilitate defining MS subtypes on OCB status with further studies on larger samples.

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