Background: In radiologically isolated syndrome (RIS), the detection of oligoclonal bands (OCBs) in cerebrospinal fluid (CSF) is critical for space dissemination validation associated with magnetic resonance imaging (MRI) multiple sclerosis (MS) diagnostic criteria published by Barkhof in 1997. It gives strength to RIS diagnosis compared with other incidental white matter T2 lesions. However, lumbar puncture for CSF collection is considered relatively invasive. Previous studies have demonstrated applicability of OCB detection in tears to the diagnosis of MS and CIS.

Objective: To assess concordance between OCB detection in tears and in CSF.

Patients/methods: We have prospectively included patients with RIS and compared results of CSF and tear OCB detection by isoelectric focusing (IEF). Tears were collected using a Schirmer strip.

Results: We included prospectively 45 patients. For 3 of them, samples were non analyzable due to insufficient quantity of tears. OCBs were detected in CSF for 55% (25/45) and in tears for 50% (21/42) of patients. All patients with tears OCBs had CSF OCBs. One patient had a positive CSF and negative tears.

Discussion: CSF OCB presence in RIS is considered to be predictive of conversion to a clinical event. Associated with spatial dissemination MRI criteria, their detection denotes a statistically significant increased conversion risk to clinical event (Lebrun et al, Archive Neurol 2010).

Conclusion: We suggest that tears OCB detection, if positive, may replace CSF-OCB detection in patients with radiologically isolated syndrome. Lumbar puncture in this context could be avoided.