

OLIGOCLONAL BANDS IN CENTRAL NERVOUS SYSTEM DISEASES IN CHILDREN

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Background: The oligoclonal bands are clones of immunoglobulins detected in serum and cerebrospinal fluid. Their presence in pediatric patients is restricted to inflammatory-demyelinating disorders such as multiple sclerosis, ADEM, opsoclonus-myoclonus syndrome. Sometimes oligoclonal band may be detected in non-inflammatory disorders like migraine and epilepsy.

Aim: The authors studied the diagnostic associations and sensitivity of intrathecal (oligoclonal bands restricted to cerebrospinal fluid) and mirrored oligoclonal bands (oligoclonal bands in cerebrospinal fluid and in serum) in a group of children with various central nervous system disorders.

Methods: Cerebrospinal fluid and serum from 356 children (aged from 2 months to 18 years, 213 females and 143 males) who underwent cerebrospinal fluid investigation were tested for oligoclonal bands using isoelectric focusing.

Results: The patients were divided in two large groups : inflammatory (N=176, 49.4%) and non-inflammatory (N=180, 50.6%) central nervous system disorders. The group with inflammatory central nervous system disorders included: meningitis, encephalitis, multiple sclerosis, ADEM, boreliosis, Guillaine-Barre syndrome. Non inflammatory group consisted of patients with leukodystrophies, epilepsy, headaches, brain trauma, neuromuscular disorders, cerebral palsy, developmental delay/ intellectual disability. Intrathecal oligoclonal bands were found in 76 patients (43%) of those with inflammatory CNS disorders compared with 24 of patients (13.3%) with non-inflammatory disorders.

Conclusions: Intrathecal oligoclonal bands were restricted to patients with inflammatory central nervous system disorders. They may be a useful but non-specific biomarker of inflammation of multiple causes.