MSRV POL SEQUENCE COPY NUMBER AS A POTENTIAL MARKER OF MULTIPLE SCLEROSIS

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Multiple sclerosis (MS) is a neurological disease in which demyelination in the brain and spinal cord is observed. The causal influence of bacterial/viral infections and genetic/immune factors in the etiology of multiple sclerosis is suggested. Multiple sclerosis-related retrovirus (MSRV) is one of the potential agents, which can lead to development of the disease.

The aim of cytogenetic studies was assessment of MSRV pol sequence copy number in patients with MS compared to normal individuals.

Cytogenetic slides with interphase nuclei and extended chromatin fibers were prepared from peripheral blood of 16 patients with MS compared to normal individuals.

Fluorescence in situ hybridization (FISH) with biotinylated product of polymerase chain reaction was used in order to analyze MSRV pol sequence copy number in the examined material. Detection of MSRV pol probe was carried out by immunological reaction with avidin-fluorescein and biotinylated anti-avidin.

MSRV pol sequence copy number was significantly greater in MS patients than in normal individuals. Using FISH technique to extended chromatin fibers, it was observed that MSRV pol exists as tandem repeats on various chromosomes. The increased number of MSRV pol sequence has been found on chromatin fibers of MS patients as compared to healthy controls.

Key words: multiple sclerosis (MS), MSRV, pol sequence, FISH, interphase nuclei, chromatin fibers

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