

Segmental demyelination induced by cerebrospinal fluid of progressive spastic paraparesis: Correlation with altered proteolytic parameters

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Progressive spastic paraparesis (PSP) is a demyelinating disease of the central nervous system.

We studied the ability of the cerebrospinal fluid (CSF) of patients to induce alterations in rat peroneal nerves, and to modify the proteolytic activity of trypsin in vitro. Subperineurial injection of native or heated CSF of patients induced segmental demyelination and other cytological alterations 5-7 days later, in the infiltrated zone, while proximal and distal regions were normal. The CSF of normal subjects did not induce demyelination, but upon heating, it did so. Trypsin was strongly inhibited by the normal CSF but upon heating, its inhibitory activity was replaced by a strong potentiation. In contrast, native and heated CSF of patients potentiated trypsin. Our findings indicate that (1) the normal CSF contains a thermostable factor that potentiates trypsin whose function is overruled by thermolabile protease inhibitors; (2) the CSF of PSP patients has a reduced inhibitory activity an