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Evaluation of ADAMTS-9 Expression in Post-Mortem Brain Tissue

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Abstract

Background: Extracellular Matrix (ECM) modifications have been reported in the Central Nervous System (CNS) of multiple sclerosis (MS) within post mortem brain tissue due to both the increased synthesis of ECM proteoglycans, and release activation of matrix metalloproteinase (MMPs). Multiple sclerosis (MS) is chronic inflammatory demyelinating disease written off as inflammation and demyelination disease, mainly located in central nervous system (CNS) white matter (WM). This study aims to clarify the potential pathophysiologic role of adisintegrin And metalloproteinase with thromboSpondin motif-9 (ADAMTS-9) in MS. **Materials and methods:** Immunohistochemistry was performed to study the expression of ADAMTS-9 in both normal and MS white matter by confocal microscopic using specific antibodies. Fifty frozen blocks of brain tissue were obtained from the UK MS Society Tissue. All tissues blocks were marked by immunohistological material including antibodies to Human leukocyte antigen (HLA-DR) to assess the macrophage activation, Glial fibrillary acidic protein (GFAP) for astrocyte, neurofilaments (NF) for neurons and Von Willbrand factor (VWF) for endothelial. **Results:** In MS lesions, ADMTS-9 expression was increased in comparison to control samples. The expression of ADAMTS-9 was increased in active lesions as well as was associated with different cells from neuron, endothelial covering blood vessels astrocyte and microglia. **Conclusion:** The expression of ADAMTS-9 at the protein level was increased in active inflammatory lesions with evidence of myelin breakdown, suggesting that up-regulation of ADAMTS-9 may be a general phenomenon induced by CNS injuries.

Keywords: Multiple Sclerosis; ADMTS-9; Brain Section

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