Immunocytochemical studies of the neurodegenerative diseases the ubiquitin proteasome system

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Abstract

The present study is related to the immunoreactivities of the sub-units of 26S proteasome for the principal forms of tauo- and synucleinopathies. Several cerebral diseases were studied. Many studies showed that the weakening of the function of the proteasome is associated with the cellular senescence. However, the data available are reduced in fragments and are contradictory.

Six tauopathies were studied. All showed the immunoreaction of ATPase S6b in the hippocampus and the temporal cortex. For the Alzheimer and Down Syndrome patients, the pyramidal cells of the CA1 and CA3 of the hippocampus were the most positive zones. CA4, dentate gyrus and subiculum were less reactive with ATPase S6b. Of the two synucleinopathies studied (LBD and MSA), Lewy bodies were less immunoreactive as visualized in some brains of patients having Lewy Body Disease.

Our data suggest that the degree of weakening of the ubiquitin-proteasome system is much more dramatic in tauopathies than in the synucleinopathies.

The evidence accumulates more and more for a participation of the ubiquitin-proteasome system in the degradation of abnormal proteins in a variety of neurological disorders.

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