Astrocytes as the main players in primary degenerative disorders of the human central nervous system

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Along the last years it has been demonstrated that non-neural cells play a major role in the pathogenesis of the primary degenerative disorders (PDDs) of the human central nervous system. Among them, astrocytes coordinate and participate in many different and complex metabolic processes, in close interaction with neurons. Moreover, increasing experimental evidence hints an early astrocytic dysfunction in these diseases. In this mini review we summarize the astrocytic behavior in PDDs, with special consideration to the experimental observations where astrocytic pathology precedes the development of neuronal dysfunction. We also suggest a different approach that could be consider in human investigations in Alzheimer's and Parkinson's disease. We believe that the study of PDDs with human brain samples may hold the key of a paradigmatic physiopathological process in which astrocytes might be the main players.

Astrocytes

Human central nervous system

Neurodegeneration

Primary astrocytic degeneration

Primary degenerative disorders

Alzheimer disease

amyotrophic lateral sclerosis

astrocyte

behavior

central nervous system

degenerative disease

frontotemporal dementia

human

human cell

Huntington chorea

major depression

mouse

nerve cell

nerve degeneration

nonhuman

Parkinson disease

pathogenesis

schizophrenia

Short Survey

spinocerebellar degeneration