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Advances in Neurodegenerative Diseases Research and Therapy

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Degenerative diseases of the nervous system affect millions of people worldwide and, since the blood–brain barrier restricts the passage of most drug candidates into brain tissue, have limited therapeutic interventions available at present. The term 'neurodegenerative disease' is often used as an umbrella term which includes various debilitating conditions affecting brain, including Alzheimer's, Parkinson's, and Huntington's disease. Previous studies have primarily identified neuronal degeneration as the primary cause of these diseases, but recent evidence points towards the contribution of glial cells in maintaining a physiological and functioning neural output. Although degenerative diseases have different pathological markers and clinical symptoms, they share common molecular pathways, including gliosis, proteostasis, inflammation, metabolic alterations, etc. Thus, it is evident that understanding the molecular changes occurring during the development and progression of neurodegenerative diseases may facilitate the development of effective therapeutic interventions.

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