Neurodegeneration and neuroinflammation

The causes of central neurodegenerative changes in the course of neurological diseases such as Alzheimer's disease and Parkinson's disease and many others are not fully explained. It is known that these are multifactorial genetic and environmental diseases. While the cause of single gene diseases is better understood, the share of genes in multi-gene diseases is not fully understood. Among the environmental factors that cause neurodegeneration, changes in the immune system are pointed. What is more, in recent years there are more papers suggesting that Alzheimer's disease may have an infectious origin. Bacteria responsible for gum disease, rheumatoid arthritis, and atherosclerosis have been found in the body of deceased people who had Alzheimer's disease.

Recent reports indicate that more than a third of COVID-19 patients have neurological symptoms, including from the central nervous system, even as severe as stroke or impaired consciousness. It has been suggested that an infection has been a risk factor for neurodegenerative diseases. Therefore, increased exposure to infections, especially in people under 60 years of age, may contribute to a greater number of cases of neurodegenerative diseases and their course in the future. Will be after this infection new biomarkers predisposing to the occurrence of old age diseases? Will there be new neuroimaging changes to facilitate early diagnosis of degenerative diseases? Will this knowledge contribute to the development of new, more effective therapies for neurodegenerative diseases?

In this Special Issue, we will try to explain the impact of immune changes associated with infections and their effects on the development of neurodegeneration and the emergence of diseases of old age.

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Guest Editor:
Prof. Jolanta Dorszewska
Laboratory of Neurobiology, Department of Neurology, Poznan University of Medical Sciences, Poznan, Poland
dorszewska@ump.edu.pl and jolanta.dorszewska@ump.edu.pl

Jolanta Dorszewska