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Jerzy Leszek

Wroclaw Medical University, Poland

Early identification and efficient therapy of neurodegenerative disorders nanotechnology as a tool

Alzheimer's disease (AD) is the most common cause of dementia among people aged 65 and older. The diagnosis of the sporadic AD is based on clinical exclusion criteria and is only definite at necropsy. So, biochemical markers for AD would be of great value for its early diagnosis. During the last decade, research efforts have focused on developing CSF biomarkers for AD. The diagnosis performance of the CSF biomarkers: Tau protein, the 42-amino acid form of beta-amyloid (A Beta 42) and amyloid precursor protein are of great importance. Since AD pathology is irreversible and present-day medications for AD only lower its associated symptoms, application of disease-modifying treatments could be successful only if AD early diagnosis is possible. The recently growing application of nanotechnology in molecular detection of biomarkers is promising for very early diagnosis of AD. From a practical point of view, one may perform a molecular detection process either inside the body (in vivo) or on the samples derived from the body (in vitro). In his presentation, author discusses the challenges of current treatment and diagnosis of AD and the development of biocompatible nanoparticles-provide the rational and potentials using nanoparticles for both drug carrier and imaging contrast agent for early diagnosis and treatment of AD and other neurodegenerative disorders like Parkinson disease.

Biography

Jerzy Leszek is a Professor of Psychiatry, Vice-Head of the Department of Psychiatry, Head of Alzheimer's Disease Lab at Medical University in Wroclaw, and Scientific Director of Alzheimer's Disease Center in Scinawa near Wroclaw, Poland. He completed his Graduation at Medical University of Wroclaw in 1980, was awarded a Doctorate in Wroclaw in 1981 and in 1999 examination for the degree of Associate Professor of Psychiatry and since 2005, he is working as Full Professor of Psychiatry at Wroclaw Medical University. He is the author and co-author of more than 540 papers (especially from old age psychiatry), and has published some chapters to the books in reputed international journals and serving as an Editorial Board Member of several journals. He is Editor-in-Chief of *Journal of Yoga and Physical Activity*. He is Scientific Editor and Co-author of first Polish academic handbook on Alzheimer's disease and ten another academic handbooks from old age psychiatry, member of scientific associations.

jerzy.leszek@umed.wroc.pl

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