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Early identification and efficient therapy of neurodegenerative disorders: Nanotechnology as a tool

Alzheimer's Disease (AD) is most common cause of dementia among people of aged 65 and older. The diagnosis of 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 (ABeta 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 discuss 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 Professor of Psychiatry, Vice-Head of the Department of Psychiatry, Head of Alzheimer's Disease Lab at the Medical University in Wroclaw, and Scientific Director of Alzheimer's Disease Center in Scinawa near Wroclaw, Poland. He graduated 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 author and coauthor more than 540 papers (especially from old age psychiatry), some chapters to the books published in reputed Polish and 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 (Polish and international), member a lot of scientific associations e.g founder and president of Lower Silesian Association of Alzheimer's Families, first of its kind in Poland, President of the Scientific Council of Alzheimer's Disease Center in Scinawa, near Wroclaw, Former President and founder of Polish Psychogeriatric Association, Former Secretary (now member) of European Old Age Psychiatry and Former Member of Board of Directions of International Psychogeriatric Association.

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