

Disturbances of innate immunity in Alzheimer's disease: Possible therapeutic approach

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Objectives: Human leukocytes are frequently resistant to viral infection. The unspecific character of the resistance, dependence on interferons and TNF, and occurrence in cells ex vivo indicate that an in vivo mechanism of innate immunity is engaged.

Methods: The resistance could be estimated in a test based on peripheral blood leukocyte infection by vesicular stomatitis virus.

Results: The resistance is individually differentiated and depends on human age. The strongest antiviral resistance is observed in 30-40 year old blood donors and the weakest in the group over 60 years.

Conclusions: The deficiency of antiviral resistance is observed in both non clinical as well as in clinical (cancer and Alzheimer disease) groups over 60. The possible stimulation of leukocyte resistance by plant and synthetic drugs is discussed in the review.

The microglia and neuronal cells are directly involved in inflammatory process in AD. Probably the long-term activation of the innate immune system leads to triggering of an inflammatory cascade that converges in cytoskeletal alterations like tau aggregation or paired filament formation and accelerates neurodegeneration. Search for new drugs able to improve cognitive functions of AD brain and able to attenuate inflammatory and autoimmune reactions are an important challenge for the near future.

Biography

Dr Jerzy Leszek is full professor of psychiatry at the Medical University in Wrocław, Poland and vice-director of the Psychiatry Department. He is author and co-author more than 210 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 Scientific Editor and co-author of first Polish academic handbook on Alzheimer's disease and five another academic handbooks from psychogeriatrics, member a lot of scientific associations eg founder and president of Lower Silesian Association of Alzheimer's Families, first of its kind in Poland and Former Member of Board of Directions of International Psychogeriatric Association

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