

October 22-23, 2018
Athens, GreeceMagda Tsolaki, J Neurol Neurosci 2018, Volume: 9
DOI: 10.21767/2171-6625-C3-013

AN OLD AND NEW CHALLENGE FOR TREATMENT OF ALZHEIMER'S DISEASE

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Cognitive decline and dementia are among leading chronic conditions undermining the quality of life in our aging population. Despite the enormous financial expenses and the effort of world scientific and medical community, a 30 year period of active research into the neurobiology and neuropharmacology of AD did not result in the development of a therapy. Over 150 unsuccessful compounds were tested and a cure for dementia has yet to be discovered. Identifying modifiable risk factors towards disease prevention is a high priority. AD appears to be a complex and multifactorial disorder. Both environmental and hereditary factors are believed to be involved in the pathogenesis of AD. Among the most common pathogenic factors are: insoluble deposits of beta amyloid plaques; intracellular neurofibrillary tangles; loss of synapses; brain inflammation; neuronal loss; altered cholesterol metabolism; formation of reactive oxygen species (ROS) due to oxidative stress; presence of metal ions; depletion of neurotransmitters; mitochondrial dysfunction; protein glycation; apolipoprotein E polymorphic allele risk. Aging also has a strong influence on AD development. Efforts to develop new therapies to combat AD suffer from high failure rates that make it difficult to justify continued investment in the field. One possible explanation is the possibility that treatments aimed at a single pathologic process will be ineffective. For example, the most popular, the first and dominant hypotheses in the area of AD is the amyloid hypothesis, which posits that either the overproduction and/or the under clearance of amyloid β ($A\beta$) is a proximate cause of AD. However, we have no benefit targeting $A\beta$. Hippocrates many centuries ago said that food should be your medicine and if you need medicine, take it from food. Natural products have provided an invaluable source of inspiration in the drug discovery pipeline. Currently, functional foods to prevent and/or treat many conditions including neurodegenerative diseases represent a promising field of study, which is gaining attention. Many dietary components as well as a Mediterranean diet are a good source of antioxidants and are effective in inhibiting stress and have antiinflammatory properties showing substantial potential against AD pathogenesis such as $A\beta$ accumulation and toxicity and tau phosphorylation. These dietary components are also associated with reductions in other pathophysiological conditions of AD while improving memory, learning ability, cognitive function and protecting against neuronal cell death. I have to present two Greek studies and their results with 1. Crocus Sativus and 2. Early harvest Extra Olive Oil



Biography

Professor of Neurology, Head of the 1st University Department of Neurology, Neuropsychiatrist and theologian, and she has worked at Aristotle University of Thessaloniki since 1982. She has been the main author of many Books (48), many abstracts in Greek (513) and International (446) Conferences, she is the first author or co-author in many Papers in Greek (186) and International Journals (363) with h-index=47, and more than 15.000 citations, (Scopus). Totally 52 awards. She participated in many European, American and Greek funded programs such as ICTUS, DESCRIPA, SHARE, ENIR, ADNeuromed, BIOMARK-APD, AD-gaming, MIRAGE, I-Connect, ASPAD, CBP, EN-NOHSHS, EMIF, EPAD etc. She created Greek Alzheimer Association in 1995, and Greek Federation in 2007 -she is now the chair of this foundation- and she is scientific director of two Dementia Units for outpatients. She is member of National Observatory for dementia. She has four children and 8 grandchildren.

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