A DIET ENRICHED IN POLYPHENOLS AND POLYUNSATURATED FATTY ACIDS, LMN DIET, AFFECTS AGING AND THE PHENOTYPE OF A MOUSE MODEL OF ALZHEIMER DISEASE, TG2576


Introduction: Normal aging and Alzheimer disease (AD) are accompanied by declines in motor and cognitive performance. AD is a neurodegenerative disease characterized also by the deposition of extracellular amyloid plaques in cortex and hippocampus. Our previous results ruled out the properties of *LMN diet, a natural diet enriched in polyphenols and polyunsaturated fatty acids, as a modulator of neurogenesis in adult mouse.

Aims: To study both prevention and beneficial LMN effect in cognitive and pathological aspects of aging and AD.

Methods: Two groups of transgenic mouse AD model, Tg2576, and 129S1/SvImJ (WT) mice were fed with a standard Harlan 2014 control and LMN diets during 3 and 5 months before and after Aβ deposits have been appear. Animals were sacrificed, plasma was recovered for ELISA determinations and brains were processed for immunohistological or western-blots studies. Aβ content and GFAP expression were determined. Morris Water Maze was assessed to 18 months age male's mice fed control or LMN diet.

Results: LMN-fed mice, both WT and Tg2576, exhibited spatial memory retention comparable to four months mice. LMN diet induces cell proliferation in hippocampus, and affects also the Aβ content in Tg2576.

Conclusions: The improvement of LMN diet fed mice in Morris Water Maze test, suggest the beneficial effect of LMN diet not only in neurodegenerative diseases like AD, but also in normal aging.

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