Abstract

Although Alzheimer’s disease is a brain disorder, a number of peripheral alterations have been found in these patients; however, little is known about how the key genes involved in the pathophysiology express in peripheral cells such as lymphocytes during normal compared to neuropathological ageing. We analysed the expression of tau, of the amyloid precursor protein, of nicastrin and of the -site APP cleaving enzyme genes by RT-PCR in lymphocytes from a small group of late-onset Alzheimer’s disease patients, from aged patients suffering from neuropsychological conditions different from Alzheimer’s and from cognitively healthy subjects divided in four groups by age. We also investigated correlations between gene expression and levels of blood pressure, glucose, total cholesterol and triglycerides as risk factors for Alzheimer’s. Results show no tau expression in lymphocytes, a lack of detection of nicastrin expression in Alzheimer’s patients and correlations between the medical conditions studied and gene expression in lymphocytes. We believe nicastrin gene expression in lymphocytes should be considered of interest for further analyses in a wider population to investigate whether it might represent a potential biomarker to differentiate Alzheimer’s from other neuropsychological disorders.

Keywords

Alzheimer’s disease, APP, BACE1, nicastrin, normal ageing, risk factors.