

Publication

Apoptosis of CD4+ T and natural killer cells in Alzheimer's disease

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BACKGROUND: Immunotherapy appears to be a potent treatment against Alzheimer's disease (AD), but the mechanisms underlying neural-immune interaction are still not known. METHODS: Here, we determined cell death and distribution of lymphocyte subsets of peripheral blood mononuclear cells (PBMC) in AD and aging, e.g. T (CD4+ CD3+, CD8+ CD3+), B (CD19+) and NK (CD16++CD56+) cells. RESULTS: Increased apoptosis was found in CD4+ T and NK cells in AD, while in aging all subsets were affected. The expression of anti-apoptotic Bcl2 correlated with observed cell death in T-helper and B cells irrespective of dementia. The levels of Bcl2 in T-cells were significantly increased in mild AD. Apoptosis and Bcl2 levels were also elevated in the APP (751SL)xPS1 (M146L) transgenic mouse model. CONCLUSION: The mechanisms triggering apoptosis and activation of lymphocytes in AD appear therefore to be different than those in immunosenescence and possibly bear an important biomarker to monitor immunotherapy in AD.

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