Introduction

Cognitive impairment in Multiple Sclerosis (MS) patients has gained increasing awareness in recent years. In part, similar domains have been reported to be affected as in Alzheimer's dementia (AD) patients. We assessed memory and attention in AD and MS patients in a standardized fashion and compared the findings in both patient groups.

Methods

Cognitive performance was assessed by means of the Memory and Attention Test (MAT), a computer-based test, by which working and short-term memory, each for verbal, figural and episodic material, as well as selective attention are investigated.

The assessments were carried out in a group of 42 patients with mild to moderate AD (14 men, 28 women; age (mean±SD): 71.2±7.2 years; MMS: 20.3±3.6) and a group of 502 outpatients with MS (165 men, 337 women; age: 40.7±10.8 years; EDSS:2.8±1.7). MAT findings in both patient groups were compared to those in age-, sex-, and education-adapted reference groups of 42 resp. 88 healthy persons.

Results

In both patient groups, selective attention was found unimpaired. Both groups showed memory impairments of varying degree, particularly in episodic working and short-term memory. Mean episodic short-term memory score in the AD patients was 0.71 SD below, in the MS patients it was 0.34 SD below the score of the controls.

Z-transformed mean values in MS and AD patients are given for the different cognitive domains (VWM: verbal working memory; VSTM: verbal short-term memory; FWG: figural working memory; FSTM: figural short-term memory; EWM: episodic working memory; ESTM: episodic short-term memory; A1-A3: selective attention at 3 levels of difficulty). Significances of differences between patient and control groups were calculated by means of unpaired Student's t-tests (*: p<0.05; **: p<0.01)

Discussion

AD and MS seem to be rather different diseases of the brain with respect to pathogenesis (degenerative vs. inflammmative) and localization (primarily cortical vs. primarily subcortical). However, on a neuropsychological level, both are associated with an impairment of episodic short-term memory. This may be attributed to an unspecifically high vulnerability of the short-term storage of contextual information to any type of brain lesion or to similarities in the pattern of neurobiological damage in both diseases.

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