Personality features and cognitive decline in patients with beginning Alzheimer’s disease

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Introduction
The possible link between personality traits and cognitive decline in dementia such as Alzheimer’s disease (AD) has been little studied. However, several authors suggest that premorbid personality characteristics may represent a risk factor for AD, and for this reason premorbid personality might differ between AD patients and controls.

The aim of this study was to explore the relationship between both premorbid personality and its changes over 5 years and cognitive decline in patients with beginning AD.

Materials and Method

Participants
54 patients (39 female and 15 male) diagnosed with beginning AD, between 56 and 89 years of age (mean age = 76.9, SD = 8.5), and 64 healthy control subjects (35 female and 29 male) aged 56 to 91 years (mean age = 69.3, SD = 8.7).

Instruments
Global cognitive status in a group of 54 patients with beginning AD according to ICD-10 and NINCDS-ADRDA criteria and in a group of 64 healthy control subjects were compared using the MMSE. Family members filled in 1) the NEO-PI-R to describe their proxies’ current personality traits in comparison to premorbid traits, i.e. those 5 years previous to the estimated beginning of AD or 5 years earlier for the control subjects, and 2) the IQCODE, ADL, IADL to assess their proxies’ cognitive and daily functioning level.

Statistical analyses
Using multiple factor analysis, we attempted to identify underlying possible correlations between premorbid personality and cognitive decline in the clinical group. To determine whether or not personality changes have an impact on cognitive capacities, multiple regressions were used. Furthermore, the domain indices of change were calculated.

Results

Global cognitive status and daily living functioning in the two groups

Figure 1. Concerning both the global cognitive status and daily life functioning, the scores were distributed differently in the two samples. The clinical group scored higher than the control group on the IQCODE, and had clearly lower scores on the MMSE, the ADL and IADL scale.

Note: MMSE, Mini Mental State; IQCODE, Informant Questionnaire on Cognitive Decline in the Elderly; ADL, Activities of Daily Living; IADL, Instrumental Activities of Daily Living.

Personality features, cognitive status and daily living functioning in the AD group

A series of linear regressions using the enter method showed that there was a negative association between neuroticism changes occurring during the last 5 years and the total MMSE scores, R² = 0.11, β = 0.43, p = .04. Openness changes are related negatively with the total IQCODE scores, R² = .22, β = .30, t(48) = 2.21, p = .03, while the changes on conscientiousness were linked positively with IADL, R² = .15, β = .48, t(48) = 2.38, p = .02.

Conclusions

With regard to cognitive status and daily living functioning, there is a large variability of scores in the patients with AD as compared to the healthy subjects.

This study reveals significant links between personality changes having occurred during the last 5 years and cognitive decline. Thus, high neuroticism and low openness may predict cognitive decline, while lower conscientiousness might have an impact in decreases of autonomy. This suggests a trend towards a convergent and diachronic deterioration, first observed in personality changes that are then followed by cognitive alterations in the clinical group.

No significant associations emerged between premorbid personality features and the cognitive status and daily living functioning. Thus, high conscientiousness might have an impact on cognitive capacities, multiple regressions were used. Furthermore, the domain indices of change were calculated.

References