coronary artery bypass surgery, was secondary to vascular ischaemic lesions, and adds some support to previously reported cases suggesting that the temporal lobe has a role to play in determining sexual orientation and behaviour.

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Characteristics of preclinical Alzheimer’s disease

Dear Editor,

The preclinical or prodromal phase of Alzheimer’s disease (AD) is the period in which subjects experience mild cognitive impairments but are not yet demented. Knowledge of the characteristics of the preclinical stage of AD is important to enable better identification of subjects with the disorder. Previous studies that have investigated the characteristics of preclinical AD had several limitations, including the fact that they focused on cognitive symptoms and neglected non-cognitive symptoms although several reports have indicated that non-cognitive symptoms are common in the preclinical stage of AD (Devanand et al., 1996). Further, while the average cognitive scores were given, no mention was made of the number of subjects with or without cognitive impairment. Also, most of the studies were performed in an epidemiological setting and not in a clinical setting, in which most subjects with preclinical AD will be seen. In this study, we give a detailed description of the cognitive and non-cognitive symptoms of subjects with preclinical AD in a clinical setting. Subjects with preclinical AD were selected from among 199 subjects older than 40 years who attended a Memory Clinic and who had at baseline no dementia and no cognitive impairment due to any neurological disorder, any somatic disorder, or any major psychiatric disorder other than affective disorder (Verhey et al., 1995; Visser et al., 2000a). Subjects who developed probable (n = 30) or possible (n = 1) AD during a 5-year follow-up study, were considered to have preclinical AD at the time of the baseline assessment (Visser et al., 2000b). The average time to the diagnosis of AD was 2.9 year (SD 1.9). The demographic and cognitive data, and scores on clinical rating scales of the subjects with preclinical AD at the time of the baseline assessment (when they were not yet demented) are shown in the table. Functioning in activities of daily living was very mildly impaired in 23% of the subjects, mildly impaired in 74%, and moderately impaired in 3%. The score on the Blessed Dementia Rating Scale (BDRS) was on average 2.2. The five BDRS items that were most often positive (score ≥ 0.5 (first eight items) or ≥ 1) were inability to remember a short list (80%), inability to recall recent events (50%), impaired emotional control (43%), hobbies relinquished (23%), and diminished initiative (20%). The average score on the Hamilton Depression Rating Scale (HDRS) was 8.9. Thirteen subjects (42%) scored below 7 and nine subjects (29%) scored higher than 13. The five HDRS items

that were most often positive (score ≥ 1 on items with a 3-point scale, and ≥ 2 on items with a 5-point scale) were general somatic complaints (42%), psychological anxiety (47%), depressed mood (39%), work and interests (35%), and somatic anxiety (26%). The average MMSE score at baseline was 26.5. 59% of the subjects had a score of 27 or higher and 7% had a score below 24. The cognitive domain that was most often impaired (score below the 10th percentile) was memory, especially delayed recall. However, five of 27 subjects (19%) did not have an impaired delayed recall performance and three of these subjects had impairments of other cognitive measures. Complex information processing and verbal fluency were also frequently affected. The performance of two subjects (6%) was not impaired on any of the cognitive tests listed in Table 1. The baseline diagnosis was cognitive impairment not otherwise specified (77%), amnestic disorder (9%), or no cognitive impairment (3%). In 61% of the subjects a co-diagnosis of a mild affective disorder (depression (n = 15) and anxiety disorders (n = 4)) was made.

This study shows that subjects with preclinical AD are generally characterized by mild functional impairment, memory impairment, and affective symptoms. However, a substantial number of subjects have only very mild functional impairment or have no memory impairment but impairments in other cognitive domains instead. These findings are relevant to the development of diagnostic criteria of preclinical AD. In order to detect subjects with preclinical AD with a high sensitivity, criteria for preclinical AD should not focus exclusively on memory dysfunction and they should not exclude subjects with very mild functional impairment, and subjects with mild affective disorders.

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