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Original article

Dementia and depression: co-distribution and risk factors in a geriatric in- and outpatient sample

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Summary – The results of a cross-sectional study on $N = 212$ elderly in- and outpatients are presented including sociodemographic data, physical findings, CAT-scan and EEG, as well as psychological tests for cognitive performance and affective symptoms. Forty-one percent of the patients showed mild and 13% severe cognitive deficits. Depression was diagnosed in 23% of the severely impaired and in 16% of the cognitively mildly impaired or unimpaired patients. Statistical analysis revealed that increasing age, female sex and low premorbid intellectual level were significantly associated with loss of cognitive function. Dementia and depression were not significantly associated with each other. The only risk factor for depression was a history of affective illness, but not cognitive deficits or social situation. CAT-scan and EEG were abnormal in 50% of the patients; however, this did not correlate with cognitive impairment or the presence of depression. From this study it is concluded that depression and dementia coincide frequently in elderly patients, but that they are associated with different risk factors It is suggested that dementia and depression are treated as two distinct disease entities.

geriatric patients / dementia / depression / psychological testing / CAT-scan / EEG

INTRODUCTION

Dementia is a frequent ailment in the elderly, with an incidence of 4-7% in persons above 65 years of age (Bickel, 1992). After 65 years, the incidence doubles for every 5.1 years of age. Depression is also common in the elderly, the prevalence being 22% in a population of general practitioner's patients above age 65 (Turrina et al, 1994, diagnoses via the General Health Questionnaire or GHQ, according to DSM-III-R criteria for major depression, APA 1987) or 5-15% in a general sample of elderly persons (Angst, 1986). The similarity between some depressive and dementive symptoms may confound the diagnosis of either disease (Bulbena and Berrios, 1986; Annen et al, 1991; Grossberg et al, 1992); also there is some overlap between scales assessing these disorders (Folstein and McHugh, 1978). Symptomatic cognitive impairment in depressive patients has been termed 'pseudodementia', which in contrast to 'true' dementia should show no morphologic alterations of the brain and should be reversible (Kiloh, 1991). Pseudodementia has been recently and thoroughly reviewed by Stoppe and Staedt (1993), who noted that pseudodementia was initially used by Wernicke to designate only seemingly impaired cognitive function in neurotic states (Berrios, 1985). Stoppe and Staedt argued against the use suggested by Kiloh (1991), on grounds that empirical data justifying the latter's concept are lacking. Moreover, depressive symptoms occur in a number of organic brain diseases like Parkinsonism (in 50-90% of cases) and Huntington's chorea (in 41% of cases), in which both dementia and depression are the clinical consequence of the underlying brain disease. Depression may arise as a psychological consequence of dementia, and depression

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may also occur independently of dementia (Emery and Oxman, 1992; Lauter and Dame, 1992). To summarise, dementia and depression may: a), just coincide; b), result from the same underlying brain disease; c), dementia may be spurious, that is, not genuine dementia, but a reversible symptom of depression; and d), depression may follow dementia as a psychological reaction to the latter.

Several studies (eg, Grossberg et al, 1992; Rabins et al, 1993) have been aimed at evaluating how cognitive impairment accompanying depression may be differentiated from depression occurring in dementia, but have failed to establish clear and prognostic criteria. A CAT-scan may not always be decisive, since morphological brain damage may become apparent only in late stages of dementia. Kral (1983) proposed that (in the elderly) cognitive impairment during depression is an ominous sign, heralding dementia. This finding was supported by a case-control study by Alexopoulos et al (1993): after three years, 43% of the depressive patients with cognitive impairment developed severe dementia, while only 12% of those without transient cognitive impairment did so. Stoppe and Staedt (1993) and Denzler et al (1986) concluded that only prospective studies may provide further insight.

The present study is based on cross-sectional data, and evaluates how cognitive and depressive signs are distributed among a population of 212 elderly patients. The hypotheses were that: 1), dementia and depression occur independently of each other; 2), biologic and social factors contribute differentially to dementia and depression. As a corollary, we studied how well dementia rating scales, the Structured Interview for the Diagnosis of dementia of Alzheimer type, Multi infarct dementia and other aetiology according to DSM-III-R and ICD-10 criteria (SIDAM), the Mini-Mental Status (MMS), the Dementia Rating Scale (DRS) and the Geriatric Depression Scale (GDS) agreed and also whether cognitive impairment in depression showed a different profile across cognitive subscores than cognitive impairment in non-depressive patients.

PATIENTS AND METHODS

Patients

The study sample consisted of $N = 212$ in- and outpatients over 50 years old, which were referred to the geriatric unit of Tübingen University because of either suspected depression or cognitive deficits. Exclusion criteria were psychiatric diagnoses other than depression or dementia and a history of recent (< one year) acute neurological disease (eg, stroke, brain tumour, subarachnoidal haemorrhage). The mean age was 68.8 11.2 years (range 37-91), with significantly more women (69%) than men (31%). Thirty-eight percent of the subjects lived in the city of Tübingen (population 65 000), 42% in the rural surroundings of the administrative district and 20% in state Baden-Württemberg; Forty-nine percent were married and 52% lived with a partner. Most (84%) were referred by a psychiatrist or neurologist; 8% appeared independently of referral. Written consent from all patients was obtained to store and evaluate data for scientific purposes.

Methods

A detailed medical and biographic history was obtained for all patients using a semistructured interview, and also taking into account information related by partners and family members. All patients received a general physical and neurological examination. When dementia was clinically suspected or when neurologic abnormalities were found, a CAT-scan was carried out (in 40%) and an EEG (in 52% of cases). The EEGs were evaluated by standard clinical criteria (IFSCEN, 1974). The CT was rated by a neuroradiologist either as normal or as abnormal (any lesions of gray or white matter). The psychological testing was performed by the same psychologist, and comprised: 1), the SIDAM (Zaudig et al, 1990); 2), the MMS (Folstein et al, 1975; Zaudig et al, 1990), which is also part of the SIDAM; 3), the DRS (Mattis, 1976); and 4), the GDS; (Sheikh and Yesavage, 1986). The SIDAM is a screening test which examines the severity of cognitive impairments in terms of orientation, memory and intellectual capability by assigning categories such as 'unimpaired' (score 47-55), 'cognitive deficits' (score 33-46), and 'demented' (score < 32). The MMS also evaluates orientation, memory, attention and numerical ability; it is much quicker (20 minutes) to administer than the complete SIDAM (45 minutes). A score of < 23 is considered to indicate cognitive impairment; a score of < 20 signals dementia. The DRS is useful for examining patients with overt dementia and allows grading of the severity of impairment. It contains 144 items covering different aspects of cognitive function. The diagnostic categories are: probable cognitive deficits (score 130-139); cognitive impairment (120-129); dementia (100-120); severe dementia (< 100; Kühl 1992). The GDS is a 15-item self-rating scale of depression according to criteria for DSM-III-R major depressive disorder, with good reliability and validity (Geiger-Kabisch and Weyerer, 1991; Kühl, 1992). GDS scores over 10 signify a major depressive episode; scores between 5-10 signal moderate depressive symptoms. The GDS is more suitable for assessing depression in