

DIAGNOSING DEMENTIA DUE TO ALZHEIMER'S DISEASE : CLINICAL PERSPECTIVE

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ABSTRACT

The diagnosis of dementia in Alzheimer's disease on clinical grounds is made by exclusion of other etiologies. The differential diagnoses of other subtypes considered along with dementia of Alzheimer's disease and the clinical process involved were studied in a tertiary level health care set up. Out of 39 patients with dementia admitted over 12 years it was found that a differential diagnoses of other subtype were considered along with dementia of Alzheimer's disease in 13 cases, while 15 cases had no such association. Most frequently associated category was vascular dementia in 30.8%. The clinical difficulties in differentiating dementia in Alzheimer's disease are discussed.

Key words : Alzheimer, dementia, diagnoses

A presumptive diagnosis of dementia in Alzheimer's disease is often possible on clinical grounds alone (WHO, 1992). It is usually considered when other known causes of dementia are excluded (WHO, 1993; APA, 1994; Folstein, 1997; Rabins, 1985). The definitive diagnosis of any degenerative dementia rests on neuropathological examination (Caine et al., 1995) which by itself may not be confirmatory in some cases.

Certain clinical features of Alzheimer's disease like depression, acute onset, stepwise deterioration; aphasia, apraxia, visual deterioration suggesting focal lesions; epileptic seizures, myoclonic jerks and parkinsonism may cause confusion with other types of dementia (Korczyn, 1991).

Multi-infarct dementia may be difficult to separate from senile dementia since patients with the latter illness may have had one or more clinically inevent infarcts (Adams and Victor, 1993). Neuropathologically, in some patients typical findings of Alzheimer's disease co-exist with evidence of cerebrovascular pathology (Ron, 1988). Vascular lesions in Alzheimer's disease contribute significantly to its clinical features (Korczyn, 1991).

There are clinical and neuropathological

overlap between Alzheimer's disease and Parkinson's disease especially among older patients (Caine, 1995) and their co-occurrence is unavoidable (Korczyn, 1991).

Alcohol is suspected as a contributory cause in substantial number of demented patients seen by hospital services, however many alcoholics who dement are suffering essentially from a coincident vascular or Alzheimer's dementia (Lishman, 1987). Alcohol related cognitive deficits have variable clinical presentation secondary to heterogeneous neuropathological finding. The term dementia is used to describe the more severe cases (Ron, 1988). There are inherent difficulties in clinical differential diagnosis of dementia.

The objective of this study was to analyze the differential diagnoses of different subtypes of dementia considered clinically along with dementia of Alzheimer's disease at a tertiary level of health care set up.

MATERIAL AND METHOD

The psychiatric inpatients of Kasturba Medical College Hospital, Manipal, from 1985

to 1996 who had discharge diagnosis of dementia (n=39) were considered for the study. The patients who were admitted for evaluation of cognitive deficits in whom dementia was ruled out at the time of discharge were excluded. The diagnosis of dementia were reevaluated and confirmed by use of both the general criteria and the criteria that govern the diagnosis of more specific types according to ICD-10 diagnostic criteria for research (WHO, 1993). The differential diagnoses considered and the final diagnosis at discharge were noted.

The data were collected from the psychiatric case record. The psychiatric case record is a well systematized proforma to elicit data on sociodemography, past and personal history, family history, premorbid personality, physical and mental status examination besides history from patients and informants. Specific information on cerebrovascular events, neurodeficits and their order of appearance were collected. It also contains discussions on the patient's condition, observation report and progress in the ward, investigation reports along with follow up data. The patients underwent detailed psychiatric evaluation and investigations including complete haemogram, electrolytes estimation, VDRL, HIV, thyroid function test, vitamin assays for B₁₂ and folic acid, cerebrospinal fluid study, CT scan of brain which ever were considered clinically relevant. For a few patients affordability was a limiting factor for specific costly investigations.

RESULTS

Dementia admission rates in the index hospital is around 4.6 per 10,000 admissions per year of which around 23.7% are seen by psychiatric department. In the psychiatric ward the average admission rate for dementia is 1.15 per hundred per year.

The study sample (n=39) consisted of 15 (38.5%) females and 24 (61.5%) males. Seventeen (43.6%) were below the age of 65 years. There were 59% Hindus, 20.5% Muslims, 17.9% Christians and 2.6% Jains. Most of them had rural

(69.2) habitat. About 13% had gone to college while 23.1% had no education. The frequency of discharge diagnoses were dementia in Alzheimer's disease (61.5%), vascular dementia (10.3%), post traumatic dementia (7.7%), dementia in other specified disease (7.7%), dementia in Parkinson's disease (5.1%), dementia in Creutzfeldt-Jakob disease (2.6%), alcoholic dementia (2.6) and unspecified dementia (2.6). Eighteen differential diagnoses were considered in 17 (43.6%) patients. Their frequencies were alcoholic dementia (12.8%), dementia in Alzheimer's disease (10.3%), vascular dementia (7.7%), dementia in other specified disease (5.1%), unspecified dementia (5.1%), dementia in Parkinson's disease (2.6%) and dementia in Creutzfeldt-Jakob disease (2.6%).

Out of 39 cases, dementia in Alzheimer's disease was considered in 24 cases as main diagnosis and in 4 as differential diagnosis. The later four cases had vascular dementia (n-2), unspecified dementia (n-1) and dementia in Parkinson's disease (n-1) as their discharge diagnosis. Nine patients with discharge diagnosis of Alzheimer's dementia had differential diagnosis of another subtype of dementia. Associated dementia subtypes in these 9 patients were vascular (n-2), in Parkinson's disease (n-1), alcoholic (n-2), unspecified degenerative (n-1), nutritional (vitamin deficiency) (n-1), in Creutzfeldt-Jakob disease (n-1) and unspecified (n-1).

Comparing the patients considered for dementia in Alzheimer's disease with (n=13) or without (n=15) another diagnosis of dementia (table) there were no difference in their age or age of onset. There were more males in the group having the differential diagnosis.

TABLE
COMPARISON OF PATIENTS CONSIDERED FOR DEMENTIA IN ALZHEIMER'S DISEASE WITH OR WITHOUT ANOTHER DIAGNOSIS FOR DEMENTIA

	Dementia in Alzheimer's disease Without other diagnosis (N=15)	With other diagnosis (N=13)
Male/female (%)	40.0/60.0	76.9/23.1
Mean age (yrs.)	64.2	65.2
Mean age at onset (yrs.)	61.6	62.2
Mean duration (months)	31.6	33.5

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DISCUSSION

The proportion of different subtypes of dementia in the sample studied was similar to the reports of Wells (see Adams and Victor, 1993) but in contrast to the findings from community based study by Shaji et al. (1996). The probable reason of lower prevalence of vascular dementia in the psychiatric ward could be the neurological deficits that may be associated with it, which increases their chance of being admitted in other wards.

This study despite certain limitations essentially highlights the difficulty in arriving at a singular syndromal diagnosis of dementia in a clinical set up like ours. The reasons of such difficulty of considering single diagnosis could be several.

Alzheimer's disease is itself known to be heterogeneous viz. type I and type II (Bondareff, 1983; Jorm, 1985) and the clinical features may manifest with different features at different stages of illness (Roth et al., 1985; Folstein, 1997). Several diseases of primary degenerative dementias share clinical similarity to Alzheimer's disease and are often misclassified as such (Korczyn, 1991). In the 15 cases of the index study, presumed to have dementia in Alzheimer's disease without differential diagnoses, no other primary cause for dementia was considered.

Though most of the cases in the index study considered for dementia of Alzheimer's disease had gradual onset (91.7%), the onset was acute in a few because of delirium resulting from alcohol and drugs and intercurrent illness. These external factors are common in our setup and are known to confound the clinical differentiation along with other environmental factors (Liston, 1982). It is possible that multiple disorders those are considered as etiologies of dementia may occur together in the elderly people. The associations of senile changes manifesting as vascular disorders and Parkinson's disease often confound the presentation of Alzheimer's disease. In the index study it was difficult to rule out the contribution of vascular pathology in 4 and Parkinson's disease in 2 patients with presumed dementia of Alzheimer's disease considering history, physical or radiological findings.

Frequency of dementia due to Alzheimer's disease and vascular dementia in this study are comparable with reported figures (Adams & Victor, 1993; Caine et al., 1995; Small, 1995).

Associated alcohol abuse and the consequent nutritional problems that may contribute to brain damage is difficult to rule out as possible etiology in many cases. Alcohol dependence was diagnosed in 3 cases with dementia of Alzheimer's disease amongst which alcoholic dementia was considered as differential diagnosis in two considering the severity of dependence. The causal relationship of alcoholism with dementia in the elderly is difficult to establish (Lishman, 1987; Folstein, 1997).

Limited availability or affordability of special investigations like computerized tomography of brain, magnetic resonance imaging, cerebrospinal fluid studies, heavy metal screening, vitamin assays etc. curb the process of exclusion in many patients. It is known that laboratory test including measures of apolipoprotein EH (APOE 4), MRI, SPECT and PET scans increase the specificity of differential diagnosis of Alzheimer's disease and other dementia syndrome (Folstein, 1997; Jagust, 1994).

In spite of the fact that dementia is a common condition affecting 33.9 per thousand persons above 60 years of age in the community (Shaji et al., 1996) lack of public awareness often lead to inadequate information regarding onset and initial progression of the disorder. The symptoms at least in the initial phase are frequently overlooked as symptoms of senescence till significant deficits emerge. These factors often jeopardise the categorisation of dementia.

The study was retrospective in nature. Uniform data on many variables and follow up data on progress of illness was not available in many cases. These are the limitations of the study.

In conclusion, it is often difficult to arrive at the diagnosis of dementia in Alzheimer's disease in a significant proportion of cases in clinical set up. The following reasons could be considered. Dementia may be due to multiple etiologies in many cases. Limited availability and affordability of special investigations often hinders diagnostic process of excluding other subtype of dementia.

Patients are presented usually after significant physical morbidity develops with inadequate information about onset and progress of cognitive deficits which would help conceptualizing dementia subtypes. The diagnostic criteria of the present classificatory systems excludes its diagnosis in presence of other etiologies which may co-exist with Alzheimer's disease. Future studies with prospective designs may try to evaluate the clinical methods for their sensitivity and specificity in arriving at the diagnosis of Alzheimer's dementia and correlating it with neuropathological findings.

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