Some observations on the spectrum of dementia

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A study was designed to generate epidemiological and clinical data on dementia, in a teaching hospital in India. It was conducted on 124 (94 male and 30 female) elderly patients (aged more than 60 years) presenting with clinical syndrome of dementia (DSM-3). Their age range was 64-78 (mean 65.7 ± 4.1) years. Detailed clinical, biochemical, radiological and electrophysiological evaluation was done to establish etiology. Patients with psychiatric ailments, cranial trauma and tumors were excluded. The study period was 4.2 years. Multi-infarct dementia (MID) was observed to be commonest cause of dementia and was present in 59 (47.6%) cases. There were 10 (8%) patients each of tuberculosis (TB) and neurocysticercosis (NCC). Alcohol-related dementia was present in 13 (10.5%), while malnutrition (Vitamin B12 deficiency) was present in 9 (7.2%). Alzheimer’s Disease (AD) was present (NINCDS-ADRDA criteria) in 6 patients (4.8%). There were 3 (2.4%) cases 1 each of Huntington’s disease, Parkinson’s and Normal Pressure Hydrocephalus and 2 each of diabetes, hypothyroidism, hyperthyroidism and Creutzfeldt-Jakob Disease.

We conclude that AD, which is irreversible and common in the west, is relatively uncommon in India as compared to MID, infections and malnutrition, which are potentially treatable.

Key Words: Dementia, multi-infarct, disease

Introduction

Dementia in the elderly is an important, common disabling problem seen worldwide. It is a clinical state in which acquired cognitive decline impairs occupational and social life. There is a paucity of epidemiological data about dementia in India, where it is ignored and dismissed as senility. It is important to define and identify the treatable causes since it can initiate the process of the patient’s (and his family’s) adaptation to managing the disease symptoms. This study was designed to assess the spectrum of dementia, which may be beneficial in therapeutic planning.

Material and Method

The study was conducted on 124 (94 male and 30 female) elderly patients treated in our Institute. These patients presented with a clinical syndrome of dementia (DSM-3) viz.: impaired memory, abstract thinking, judgment, language-praxis, visuospatial attention. AD was diagnosed as per the NINCDS-ADRDA criteria. The diagnosis essentially included exclusion of all known causes of dementia on the basis of clinical evaluation and cranial imaging (CT/MRI). Neurosurgical and psychiatric patients were excluded. Their age range was 64-78 years (mean 65.7 ± 4.1 yrs). After clinical and neurological examination, psychometry and cognitive assessment was performed (by a clinical psychologist) using modified WAIS. The modification was done according to the Indian population, and it consisted of test of attention, orientation, calculation, fund of knowledge, judgment and abstract thinking. For visuospatial analysis, Bender Gestalt Test (BGT) cards were used. Biochemical (hematological, hepatorenal and endocrinal functions); neuroradiological (CT and MRI studies of cranium) and electrophysiological (EEG, NCV, EMG and evoked potential) evaluations were done to establish etiology. Special investigations like bone marrow, ultrasound, Elisa for TB and NCC, CSF manometry for NPH and immuno cytochemistry were done whenever required. The study period was 4.2 years.

Results

MID was present in 59 (47.6%) cases while AD was present in only 6 (4.8%). There were 10 (8%) patients each of TB and NCC. Alcohol-related dementia was present in 13 (10.5%). Malnurtion and sub-acute combined degeneration was documented in 9 (7.2%). There were 3 cases (2.4%) each of Huntington’s, Parkinson’s and Normal Pressure Hydrocephalus. Metabolic etiology was identified in 6 (4.8%) patients, 2 each of diabetes, myxedema and thyrotoxicosis. Two patients were diagnosed as Creutzfeldt’s Jakob Disease (clinical triad of dementia, myxedema and classical EEG).
Discussion

Diagnostic appraisal of dementia needs an optimistic approach for the benefit of the physician and the patient. With the advancement of new diagnostic tools it is easy to classify dementia into definite clinico-pathological groups. Epidemiological data about dementia appear conflicting as till the 80’s MID was reported to be more prevalent than AD in Japan, Korea and China but in the 90’s AD was documented as being twice as common as MID in these very countries. AD has been consistently reported to be the commonest type of dementia by American and European studies.

We observed that AD, which is irreversible and common in the west, is uncommon in India. Similarly, prevalence of AD in Nigeria has also been observed as low. Initially, it was attributed to poor suspicion, but in spite of adopting the NINCDS-ADRDA criteria, we observed that about 75% patients in our study had a potentially treatable etiology or in whom progress of dementia could be halted. MID, infections, poorly distilled country-made liquor were other common yet treatable causes and so was nutritional dementia.

Most of the Indian studies have also reported MID to be more prevalent. In the first epidemiological study from the Indian subcontinent, the incidence of AD was reported to be amongst the lowest possible. Explanations forwarded by the authors were short duration of follow-up, cultural factors and other potential confounders. In a similar study in rural northern India an overall prevalence of AD has been described as very low (0.62% in the population over 55 years and 1.07% in those aged 65 and above). Of course this prevalence increased with age. Explanations postulated were low overall life expectancy, short survival with this disease and low age-specific incidence, potentially due to differences in the underlying distribution of risk and protective factors as compared with populations with higher prevalence.

A community-based study in a rural population in Kerala reported 58% of patients with MID compared to 41% with AD. There were more women and positive family history was prominent in the AD group. Smoking and uncontrolled hypertension was associated with MID. A few Indian studies are also contradictory, with AD being suggested to be more prevalent than MID. Interestingly, in another report from India the prevalence of dementia was observed to be higher in the rural population as compared to the urban settings.

There is a difference in the incidence and prevalence of AD between underdeveloped and developed countries. Many interesting reasons have been cited. The widespread use of pesticides and the type of smoking has been directly correlated with MID, which is more prevalent in India. Another reason forwarded is the widespread use of electric lighting. Exposure to bright light suppresses the secretion of melatonin, a free radical scavenger, which inhibits progressive formation of beta sheets and beta amyloid fibrils. Its production is further reduced with aging, thus increasing susceptibility to age-related diseases like AD.

References


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