ORIGINAL ARTICLE

EARLY SIGNS AND SYMPTOMS OF ALZHEIMER DISEASE

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ABSTRACT

OBJECTIVE
The purpose of the study was to examine the Early Non-cognitive symptoms of Alzheimer's disease and to determine the duration and frequency of Non-cognitive symptoms of Alzheimers.

STUDY & DESIGN
It was cross-sectional descriptive study

PLACE AND DURATION OF THE STUDY
The duration of the study was nine months from May 2008 to February 2009

SUBJECTS AND METHODS
Non- probability convenient sampling technique was used to collect the data. Patients were first screened on the scores of Mini Mental State Examination (MMSE) and Geriatric Depression Scale (GDS) and then detailed assessment of those patients was done with Coronell Scale for Depression in Dementia (CSDD). Furthermore, the measurements including, Informant Questionnaire on Cognitive Decline in Elderly (IQCODE), Personality Inventory (PI), and section H of Cambridge Mental Disorder in Elderly Examination (CAMDEX). Data was analyzed using SPSS version 10.

RESULTS
The non-cognitive symptoms among the study participants were personality change, every day activity impairment, depressed mood, sleep, persecution, hallucination, and behavioral symptoms. The results also revealed that at least two non-cognitive symptoms were present among all the patients.

CONCLUSION
Behavioral and psychological symptoms encompass more than half of the presenting features of Alzheimer's disease.

KEY WORDS
Depression, Alzheimer disease, Behavioral and psychological symptoms of dementia.

INTRODUCTION

Alzheimer's disease is a primary degenerative cerebral disease among elderly people. Prevalence of Alzheimer's in both genders, at the age of 85 is 11-14%, 21-25% at age 90, and at the age of 95 is 36-41%.[1]

Cummings and his colleagues (1990)[2] described personality changes among Alzheimer's patients with dementia[2] Most of the studies have found symptoms of Depression in approximately 50% of all that patients.[3] In the early stages of this disease Depression is more common.[4] In the subcontinent elderly people with memory problems were rarely taken to a doctor for treatment and culturally people were more tolerant towards behavior problems such as wandering.[5] A similar attitude towards memory and behavioral problems has been reported in Argentina where people consider it a part of aging and seek no medical help.[6]

A consensus statement issued by the International Psycho-geriatric Association recommended the term "behavioral and psychological symptoms of dementia (BPSD)" to encompass all symptoms of mood, perception, thought or behavior that is present in dementia patients.[7]

These Behavioral and Psychological Symptoms diminish the quality of life of patient and their families. It also causes distress; it increases the cost of care and complicate effective medical care. These can also be used as tool to differentiate between different types of Dementia. These symptoms help in early diagnosis and hence maximize the chances of early treatment. It also increases opportunities for patients and their care givers to utilize community support, counseling facilities and adapting better life style[8].

Current study aims to enlist early Non-Cognitive Symptoms of Alzheimers in Pakistani population, living in the catchment area of Benazir Bhutto Hospital, Rawalpindi-Pakistan.

METHOD

Participants

A purposive sample of 290 participants from the general strata of the society was included. Inclusion criterion was defined as participants to be selected irrespective of gender, aged at least 16 and having experienced the death of a first-degree relative in the past one year. Exclusion criterion is defined as the presence of any already existing psychiatric disorder before the death of the deceased.

Sample

45 participants of both genders were selected through non-probability convenient sampling technique. Inclusion criteria were (a) Patients above age of 65 years, (b) Fulfilling ICD-10 criteria for Alzheimer's disease (c) must accompanied by an attendant. Exclusion criteria were (a) Patients having serious co-morbid medical problems; uremia, hepatic Encephalopathy, congestive cardiac failure, anemia, chronic pulmonary disease, hypertensive encephalopathy etc.

Instruments

Mini Mental State Examination (MMSE)
It is a brief 30 items scale[9]. It assesses orientation, attention, immediate and short-term memory, language, and the ability to follow simple verbal and written commands.

Geriatric Depression Scale
It is a 15 items questionnaire used to screen depression in old age. The ranges are classified as 0-9 "normal", 10-19 as "mildly depressed", and 20-30 as "severely depressed". [10]

(GDS)Cornell Scale for Depression (CSD)
It is a 19 item questionnaire used to assess current symptoms of depression. On the basis of a semi structured interview by a reliable informant, this test was specifically design to evaluate signs and symptoms of Major Depression in patients of Dementia.[11]

Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE)
It is a 26 item informant rated questionnaire. The optimal cutoff score on the modified Informant Question was 3.42, with 90% sensitivity and 95% specificity.[12]

Personality Inventory (PI):
This scale comprises of 18 items, which is rated by relatives & total time taken is 20 minutes. The test should be administered twice as informant is instructed to think about the patient as how he was 10 years back and fill the questionnaire as well as consider the condition of patient now and fill the questionnaire again. It can be used to assess personality in dementia and personality changes after a severe head injury.[13]

PROCEDURE

Firstly, the procedure was explained to the patients and his/her attendants. Informed consent was taken and demographic form was filled for each patient then physical examination was done. Participants were diagnosed to have Alzheimer Disease on the basis of ICD-10 criteria. Potential participants were screened by administering Mini Mental State Examination (MMSE) and Geriatrics Depression Scale (GDS) (to rule out depression). Those scoring 25/30 or below on MMSE and 8/15 or below on GDS were selected. Coronell's Scale for Depression in Dementia (CSDD) applied to both patients and informants. Personality inventory was administered twice to the informants. The informants were asked to think about the patient when he had not developed the illness and fill the questionnaire. Then they were asked to think of the way the patient was at the time of examination and fill the questionnaire again. Then, Informant Questionnaire on Cognitive Decline in the Elderly (IQ CODE) was applied. Data analysis was done using SPSS version 10. Descriptive statistics were calculated. The Paired sample T-test was used to calculate personality changes on various items of PI.

RESULTS

Total of 60 patients fulfilling the study criteria were invited to participate in the study, 08 refused to participate while other 7 were excluded because they did not fulfill the inclusion criteria, 45 consented to participate and successfully completed the study protocol. Amongst the total 45 study participants 15 (33.3%) were males and 30 (66.6%) were females. Mean age of participants was 74.80 years (SD + 7.22 years), mean age of male participants was 72.93 years (SD + 6.09) and mean age of female participants was 75.73 years (SD+ 7.65). The marital status of the study participants revealed that 14 (31.3%) were married and 31 (68.9%) were widowed. Table 1 shows educational status of the study participants and table 2 shows early signs and symptoms of Alzheimer Disease and frequency.

Table 1:
The Educational Status of Study Participants (N= 45)

Status of Education	Frequency	Percentage
Illiterate	23	51.1 %
Primary	8	17.8 %
Secondary	10	22.2 %
Graduate	1	2.2 %
Post Graduate	3	6.7 %
Total	45	100 %

Table 2:
Early Signs and Symptoms of Alzheimer Disease and It's Frequency

Early Symptoms of Alzheimer Disease	Frequency
Personality change	45 (100%)
General Decline	41 (91.1 %)
Depressed mood	38 (84.4 %)
Sleep	35 (77.7%)
Persecution	14 (31.1%)
Hallucination	20 (44.4%)
Behavioral symptoms	42(93.3%)
Memory impairment	38 (84.4%)
Every day activity impairment	38 (84.4%)

Table 2 shows that 45 (100%) of study participants have showed changes in his/her personality, according to informant. There was general decline in 41 (91.17%) of study participants whereas there was no decline in only 4 (8.9%). Majority, 41 (91.17%) of participants were reported to have lack of interest or enjoyment in things in general whereas, only 10 (22.27%) felt unreasonably guilty. According to 38 (84.4 %) of the informants, their patient was depressed 36 (80%) of study remain restless or waked up during night and 32 (71.1 %) had difficulty in getting off sleep. Persecutory ideation was present in 14 (31.17%) whereas hallucinations were reported in 20 (44.4%) of patients. Regarding changes in memory of the patients, 07 (15.6%) had no changes, however 38 (84.4%) had noticed changing in memory. The everyday activities of the patients were judged to be due to cognitive impairment and not due to physical illness. The mean of these difficulties was 38 (84.4%).

DISCUSSION

Personality changes were the earliest symptoms in 71% patients in present study. Similar results were discussed in a study which exhibited that personality changes may be among the first behavioral alterations exhibited by the patient with a dementia illness. [14] Aspects of behavior such as practicality/ independence, maturity, enthusiasm, stability, affectionateness, sensitivity, and caution relate to persistent behavioral styles, and alterations in these dimensions of behavior are justifiably viewed as personality changes. The concept of personality, thus, is appropriate for the items assessed with the current inventory.[15] Carol and Jane reported behavioral symptoms in patients of dementia included fifty percent symptoms of Anxiety and 44% activity disturbance. Six Alzheimer's disease patients which comprises of 18% and two controls group patients which constitute of 10% showed mild to moderate symptoms of Depression; Persecutory ideation was present in 14 (31.17%), the mean duration being 29.07 months (SD + 30.82 months) whereas hallucinations were reported in 20(44.4%) of patients, the mean duration of which was 20.42 months (SD + 18.81 months)[8].

According to Wilson et al behavioral symptoms might be correlated with Course of the disease. A relationship between psychotic symptoms (hallucinations and delusions) and cognitive decline had been found in patients of Alzheimer.[16] Different studies have reported that these symptoms developed over the entire course of illness.

CONCLUSION

The current study which was aimed to enlist the early non-cognitive symptoms of Alzheimer's disease revealed that at least 2 of behavioral and psychological symptoms were present among all the study participants. There is a need for a longitudinal follow up study for patients of dementia to elucidate the evolution and course of symptoms of dementia.

Limitations

- Patients included in the study were referred by General Practitioners or were recruited from OPD so the sample might not be the representative of the target population.
- In Personality Inventory, the informant or the care givers were to recall the personality before the onset of illness. The mean duration of illness was 45.31 months (SD + 42.47 months), so there is risk of recall bias in the results of Personality Inventory.
- As this was a cross-sectional descriptive study, so we cannot comment on both the evolution and the course of Alzheimer's disease.

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