

## BEHAVIOURAL SYMPTOMS IN DEMENTIA : NATURE AND TREATMENT

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*Cognitive deficits are the recognised symptoms of the dementias of later life. However, behavioural symptoms also contribute significantly to the problem and are often the main reason for a clinical consultation. The present study describes non-cognitive behavioural symptoms in 30 patients during various stages of dementia. Anxiety, depressive features, agitation, wandering and paranoid symptoms are the main features. The paper also discusses the usefulness and limitation of pharmacological treatment of these symptoms.*

The dementias of the later life have been estimated to become one of the major public health problems in the world (W.H.O., 1986). Epidemiological studies have consistently shown a high prevalence of this disorder among people over 60 years: 5 to 8 percent (Mortimer *et al.*, 1981), and life time cumulative risk of becoming severely demented by the age of 80 years has been computed to be between 15 to 20 % India, though still regarded as country of young population is going to have more and more people surviving beyond 60 years owing to improved nutrition and better health care in recent times. People above 60 already constitute nearly 8 percent of the total population in Indian and they are increasing with every successive decade. Hence we are likely to see more and more of old age related problems.

Psychopathology or clinical changes of dementias usually fall in two categories: cognitive and behavioural. The cognitive changes are well known and characteristic and are helpful in arriving at the diagnosis of dementia. The cognitive changes are related to declining intellectual abilities and lead to impairment in functions like new learning, attention and concentration, calculation abilities, memory, orientation, language, day to day functioning and self-care.

Behavioural changes are the other group of symptoms which are present from the beginning of the disease process or may make appearance during its course. Behavioural symptoms may produce personality changes, affective symptoms and even psychotic symptoms like delusions and hallucinations.

Unfortunately, there are no effective treatments for most of the dementia cases except of those cases where dementia is of secondary nature consequent upon a treatable primary illness. Most of the cases of dementia in community or clinical settings are of primary degenerative kinds like Alzheimer's disease and multi-infarct dementia. In spite of many drugs being advocated for treating cognitive decline in elderly or dementia subjects, no significant improvement has

been documented for majority of cognitive symptoms over short term or long term pharmacotherapy.

Behavioural symptoms in dementia, though recognized for a long time, are again being studied systematically which because of their disturbing nature are a major cause of anxiety and concern for caregivers and are a frequent cause for hospitalization (Reisberg *et al.*, 1987; Gustafson, 1975). Many investigators have attempted to study the treatability of these symptoms pharmacologically with variable response (Raskind *et al.*, 1987).

We are trying to study the clinical and psychosocial aspects of dementia systematically and the present paper attempts to discuss the behavioural symptomatology of dementia in Indian setting.

### MATERIAL AND METHOD

Included in the study are 30 patients (12 males and 18 females) with mean age of 63.8 + 5.4 years (range 55-77 years) drawn from the Neuro-Sciences Centre of the All India Institute of Medical Sciences, New Delhi.

All patients met DSM-III-R criteria for dementia. All patients were living in the community with their family members who were primarily responsible for their looking after and wellbeing. Detailed socio-demographic characteristics are presented in Table 1.

The clinical evaluation of these patients included detailed medical, psychiatric and neurological histories and examination. Relevant investigations like routine haemogram and blood chemistry, urinalysis, radiological examination of chest and skull, electroencephalogram, CT scans were done wherever necessary. Detailed information about the patients' symptoms and other clinical changes was obtained from the patients and their close relatives. Patients were also administered Global Deterioration Scale (GDS) (Reisberg *et al.*, 1982) for clinical staging of the dementia.

berg *et al.*, 1982) for clinical staging of the dementia. GDS is an instrument for staging of primary degenerative dementia and is divided into seven rating points corresponding to seven distinct clinically identifiable stages of the disease process: normal, forgetfulness, early confusional, late confusional, early dementia, middle dementia and late dementia. Behavioural symptoms were recorded during intake of history of illness and mental state examination and special efforts were made to record presence or absence of certain behavioural changes which are often reported in the literature on dementia viz., paranoid delusions, depressive symptoms, wandering, agitation etc.

**Table 1. Subjects characteristics (N = 30)**

<b>Sex</b>	Male = 12	
	Female = 18	
<b>Age (in years)</b>	Range : 55 - 77	
	Mean : 63.8 ± 5.4	
<b>Marital status</b>	Married and living with spouse	:24
	Widowed	: 5
	Single, never married	: 1
<b>Employment</b>	Full time employment	: 6
	(all males)	
	Part-time employment	: 6
	Retired/not working	:14
	Premature retirement	: 4
<b>Living arrangement</b>	Nuclear family	= 7
	Joint family	= 23
	None in any institution	

## RESULTS

Out of the 30 patients, five patients had associated hypertension and were receiving beta-blockers for its control. Two of these 5 patients had diabetes mellitus too which was under control with help of oral hypoglycemic agents. None of these 5 patients ever had any history of coma, hypertensive crisis or diabetic ketosis. Two of these patients had past history of stroke with complete recovery. Detailed history, examination and investigations failed to reveal any other systemic or intracranial pathology and thus ruled out any case of

secondary dementia. Twelve patients belonged to GDS stages 3 and 4 and could be classified to have low severity of dementia, while severity was high in 14 patients (stage 5 and above). Four patients belonged to stage 2 (forgetfulness) which denotes very mild cognitive decline. Behavioural symptoms in varying intensity were seen in all patients. These symptoms and their frequencies are given in table 2. It was observed that patients with mild cognitive decline tended to have anxiety and depressive symptoms; patients with moderate intensity of dementia had depressive and paranoid symptoms, while paranoid and motor symptoms predominated in severe cases. However, there was considerable overlap of symptoms among various stages of dementia based on severity. Number of symptoms per patient varied from 2 to 9 with a mean of 3.7.

**Table 2. Nature and frequency of behavioural symptoms (N=30)**

Symptom	N	%
People are stealing thing	8	27
One's house is not one's home	3	10
Delusion of abandonment	3	10
Delusion of infidelity	3	10
Suspiciousness	10	33
Visual hallucination	6	20
Verbal outbursts	12	40
Physical threats	3	10
Agitation	14	46
Wandering	7	23
Purposeless activity	13	43
Inappropriate activity	6	20
Day night disturbance	12	40
Depressed mood	10	33
Anxiety	6	20
Excessive eating	4	13

Many of these patients received psychotropic drugs for the management of their behavioural symptoms during follow up. Drugs used were: diazepam or nitrazepam (5-10 mg/day), imipramine

(50-75 mg/day) or chlorpromazine (75-150 mg/day). Care was taken to give minimum possible dose of a drug with a regular watch for any side effects. Drugs like cerebral vasodilators, cerebral activators or stimulants were not used in any case. Duration of drug usage was 2 weeks - 12 months for benzodiazepines, 6 weeks - 9 months for imipramine and 4 weeks - 6 months for chlorpromazine. No patient developed any significant side effects with these small doses. In many cases, drugs were used only intermittently. Behavioural symptoms which responded to drug treatment are listed in Table 3. However, no objective pretreatment and posttreatment ratings are available for the present study.

**Table 3. Psychotropic drugs and the target symptoms**

Drug	Target symptoms
Benzodiazepines	Anxiety, agitation, insomnia, purposelless activity
Antidepressant	Depressive features
Phenothiazines	Paranoid symptoms, verbal outbursts, agitation

## DISCUSSION

The paper provides preliminary information about the prevalence and nature of behavioural symptoms in dementia in hospital setting. Our sample of 30 patients consists of degenerative dementias (Alzheimer's and multi-infarct) and no case of secondary dementia. Considering the scope of paper, we have not further divided the sample into subgroups. Cognitive disturbances in dementia have been studied for a long time; in fact, these deficits are the very basis for the diagnosis of dementia. Lately, many workers have been attempting to study behavioural symptoms in various stages of dementia, particularly, of Alzheimer type (Reisberg *et al.*, 1987; Rubin *et al.*, 1989; Cummings *et al.*, 1987; Burns *et al.*, 1990). Diagnostic and Statistical Manual of Mental Disorder, 3rd edition revised (APA, 1987) also gives a detailed account of such associated symptoms, like anxiety, depression, excessive orderliness, social withdrawal, paranoid ideation, false accusation and verbal or physical attacks. As much as 60-84% of patients of Alzheimer's Disease had significant behavioural symptoms in above studies. Reisberg *et al.* (1987) found 58% patients of Alzheimer's dementia having significant behavioural symptomatology consisting most commonly of delusions, nonspecific agitation and diurnal rhythm disturbances. Cummings

*et al.* (1987) also found delusions and behavioural symptoms in nearly half of their patients of both dementias though perceptual disturbances were uncommon. Depressive symptoms were evident on Hamilton Rating scale for Depression but did not satisfy DSM-III criteria. Burns *et al.* (1990) in a large sample of 178 subjects with Alzheimer's disease found delusions (16%), hallucinations (17%), depression (24%) and aggression (21%). Berrios and Brook (1985) investigated 100 patients of dementia and found hallucination, delusions and other psychopathology in a large number of them. Rubin *et al.* (1989) reported behavioural symptoms in 84% of subjects with mild dementia. In our patients of mixed etiology, behavioural symptom of varying intensity could be detected in practically all cases and number of symptoms per patient varied from a low of 2 to a high of 9 from the list of symptoms given in Table 2.

Delusions and paranoid symptoms were present in 48% of cases, hallucinations in 20%, depressed mood in 33% and aggression in 40% cases. Though from these data one cannot draw any conclusion regarding incidence or prevalence of behavioural symptoms in dementia in general population, yet such a study provides useful information about nature and progress of such symptoms. So far, the management of dementia has remained very pessimistic as no worthwhile pharmacological intervention is available for cognitive deficits. Most of the time, clinicians have intervened only to make a diagnosis without making any effort for encouraging follow-up or looking at the psychosocial aspects of the problem. Even if a family has accepted the irreversible cognitive deficits of a dementia patient, it may still find behavioural symptoms troublesome and would like to see a clinician for such complaints.

The nature of behavioural symptoms usually depends upon the staging or severity of dementia process. Patients with questionable or very mild dementia usually have personality changes like passive changes (inactive, less cheerful, less responsive), agitation (irritability, increased motor responses) and self centredness. More patients with mild dementia demonstrate depressive symptoms like low levels of interest and concentration, and psychomotor retardation. In a long follow up study of Alzheimer's disease it has been seen that such changes are probably a result of the process of disease and not a concurrent depression (Kneisevich, 1983).

Psychotic symptoms like suspiciousness, delusions and hallucinations are most obvious during the moderate stage and usually do not appear before the mild degree of illness. Such psychotic symptoms are

usually a result of cognitive deficit as a patient with memory deficit may misplace things and then complain that "people are stealing things" (Reisberg *et al.*, 1987). In severe degree, patients usually have purposeless activity and wandering before losing control of most of their mental functions. Our results also tended to go in this direction. Now we plan to study the appearance and development of such symptoms in a longitudinal follow up of subjects with questionable or very mild dementia over a period of time to study their natural history.

Pharmacological treatment of non-cognitive, behavioural symptoms has remained controversial. As early as 1955, Seager evaluated chlorpromazine on the behaviour of 29 elderly psychotic women. Cognitive symptoms of dementia did not improve with chlorpromazine, but there was a global improvement in disturbed behaviour of these women. Sugerman *et al.* (1964) tried haloperidol 4.5 mg/day and placebo in 18 dementia patients, many of whom were agitated, overactive and hostile. Haloperidol was found to be superior when symptoms such as hallucination, restlessness, overactivity and uncooperativeness were present. Coccaro *et al.* (1990) studied 59 elderly dementia patients in an 8-week randomized, double-blind comparison trial of haloperidol, oxazepam and diphenhydramine.

All three drugs demonstrated modest but significant efficacy in agitated behaviour and activities of daily living. The absolute magnitude of improvement was greater for haloperidol and diphenhydramine than for oxazepam, but differences among groups did not approach statistical significance. Petrie *et al.* (1982) evaluated haloperidol (4.6 mg/day), loxapine (22 mg/day) and placebo in 64 dementia patients of primary degenerative dementia and multi-infarct dementia. Active medication was significantly more effective than placebo on BPRS items like suspiciousness, hallucinatory behaviour, excitement, hostility and uncooperativeness. However only 32% of loxapine-treated patients, 35% haloperidol-treated patients and 9% of placebo-treated patients were globally rated as moderately or markedly improved. This fact is important since these percentages are much lower than those usually reported in younger non-demented psychotic patients. In another similarly designed study, Barnes *et al.* (1982) evaluated thioridazine (mean dose, 62.5 mg/day), loxapine (mean dose, 10.5 mg/day) and placebo and obtained similar results. It appears that target symptoms such as agitation, hyperactivity, hallucinations, delusions and paranoid ideation must be present if antipsychotic drugs are to be effective. Though ours is not a double blind study, it does tell us about the nature of behavioural symptoms in dementia patients, and usefulness

of some drugs in certain target symptoms (Table 3).

Since we used drugs in small quantities and that too intermittently, we did not encounter any problematic side effects. However, one must be cautious of short-term and long-term side effects of psychotropic drugs, especially neuroleptics, in elderly subjects who may be more prone to developing conventional side effects. Drugs may also adversely affect their already compromised cognitive state. Development of tardive dyskinesia would remain a major concern while using neuroleptics in elderly individuals. Akathisia is very common and dysphoric effects of akathisia are very troublesome, yet difficult to diagnose. Drugs may also lead to further behavioural disruption when are indiscriminately prescribed for non-specific aggressive behaviour. All such limitations of drug-therapy are essential to be kept in mind.

It appears that behavioural disorder in elderly demented subjects demands careful evaluation. Behavioural symptoms may be caused by a variety of physical illnesses, medications and environmental and psychosocial factors. Since therapeutic efficacy of psychotropic medication is limited, it is especially important to look for above factors. Proper management of physical illnesses and offending medications may alleviate the problem significantly. Similarly, one must strive to search for possible social and environmental solutions for behavioural disturbances in this population.

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