Persecutory Delusions in Dementia

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Background: Persecutory delusions are common in dementia. This study was undertaken to investigate the prevalence, associated factors, and characteristics of persecutory delusions in demented patients.

Method: The sample population included 167 demented patients (DSM-III-R criteria) admitted to a geropsychiatric ward. Patients were assessed for the occurrence of any persecutory delusions since the onset of dementia. The content of persecutory delusions, the patients' response to the delusions, and any concomitant psychiatric symptoms were also explored.

Results: Of the 167 demented patients, 45 (26.9%) showed symptoms of persecutory delusions. Patients with persecutory delusions had a higher prevalence of other delusions, hallucinations, and physically aggressive behaviors. The deluded patients often thought that their caregivers were their persecutors and had a wide range of responses to their delusions. After they were hospitalized, many of these patients attacked medical staff and were uncooperative with treatment.

Conclusion: Persecutory delusions are common in dementia of various types. Deluded patients often have vigorous responses to their delusions including physically aggressive behaviors and suicide attempts. Careful evaluation is needed to assess the potential for violent and suicidal behaviors in these patients. Medical staff should be alert to clinical strategies for handling the treatment of such patients when they become violent or uncooperative.

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Delusions have long been recognized as a manifestation of dementia. The reported rates of delusions in dementia have ranged from 10% to 73% in Alzheimer's disease and up to 40% in multi-infarct dementia.[1] Among the delusions found in demented patients, persecutory delusions are commonly noted and are frequently the cause of physical aggression, unnecessary security measures, and refusal to eat.[2–4]

Although the association of persecutory delusions with dementia is well established, the characteristics of persecutory delusions and patients' responses to their delusions have received little systematic study. Most research has investigated the characteristics of delusions in dementia by grouping various delusions together and exploring the statistical association between the delusions and other psychiatric symptoms. However, clinical experiences and limited research data suggest that in dementia, the various kinds of delusional content may have different behavioral responses.[2,3,5,6] The aim of this study was to investigate the persecutory delusions in demented patients by both statistical methods and descriptive exploration to gain insight into the pathophysiology and natural history of these phenomena.

METHOD

The sample population consisted of 167 demented patients consecutively admitted to the geropsychiatric ward of Veterans General Hospital-Taipei from August 1989 through December l997. The geropsychiatric ward in this hospital serves both the general population and veterans. Of the 167 demented patients, 87 (52.1%) were veterans. Most (118/167) of these demented patients had lived with their families, whereas 16 had lived alone and 33 had lived in nursing homes or veterans' homes before they were hospitalized. These demented patients were brought to the hospital by their family members or were referred from nursing homes or veterans' homes. The 3 leading problems that resulted in patients' admissions were violence, inappropriate behaviors, and emotional problems. Seven of the 167 patients had alcohol abuse; no other substance abuse was noted. The behavioral characteristics of some of these patients with regard to delusions of theft and jealousy have been reported in previous studies.[5,6] All patients met the criteria for dementia set by the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised* (DSM-III-R).[7]

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Standardized diagnostic procedures included complete medical history, physical and neurologic examinations, routine blood tests, chest x-ray, electrocardiogram (ECG), and computed tomography (CT). Diagnosis of Alzheimer's disease was made according to criteria from the National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer's Disease and Related Disorders Association[8] and from DSM-III-R.[7] Patients were assessed for the occurrence of any persecutory delusions since the onset of dementia. Persecutory delusions were defined as a false belief that one is being harassed, plotted against, or persecuted. Aggression was defined as physical aggression against others or making threatening gestures. The content of the persecutory delusions, the patients' response to the delusions, and the patients' other psychiatric symptoms were determined by interview of the patients and their caregivers (at the time the patients came for treatment) and a review of current and previous hospital charts. All demographic data were supplied by caregivers. Dementia severity was assessed using the Folstein Mini-Mental State Examination (MMSE); scores ranged from 0 to 30.[9]

Data were analyzed using SPSS for Windows Release 7.0 (SPSS Institute, Chicago, Ill.). Two-tailed t tests were used to compare the differences between the means of continuous variables. The chi-square statistic was used to compare differences in dichotomous variables. A p value less than .05 was considered to be significant. Data are presented as mean ± standard deviation.

RESULTS

Of the 167 demented patients, 45 (26.9%) had persecutory delusions. Patients with persecutory delusions were found to have various types of dementia, including Alzheimer's dementia (21 of 91), multi-infarct dementia (17 of 57), and dementia not otherwise specified (NOS) (7 of 19). There was no significant difference in the prevalence of persecutory delusions among the 3 types of dementia ($\chi^2 = 1.88$, df = 2, p = .391). Table 1 summarizes the demographic data and the prevalence of psychotic symptoms and physically aggressive behaviors in patients with and without persecutory delusions. There were no significant differences between the 2 groups with regard to age, gender, age at onset, and MMSE score. Patients with persecutory delusions suffered from more delusions of theft, jealous delusions, visual hallucinations, auditory hallucinations, and physical aggression than those without persecutory delusions. Persecutory delusions developed after the appearance of Capgras syndrome in 3 patients. Four patients were thought to be premorbidly suspicious.

The duration between the onset of dementia and the development of the persecutory delusions ranged from 0 to 8 years (mean = 2.0 ± 2.1 years). Of the 45 patients, 34 (75.6%) had developed persecutory delusions within 2 years after the onset of dementia. The mean duration of the presence of the persecutory delusion was 1.0 ± 1.6 years. The persecutory delusions in most (97.8%) of the patients were simple and consisted of elementary, loosely structured beliefs. These delusions were typically characterized by thoughts that the patients or even their family members would be killed, persecuted, or poisoned. The imagined persecutors often changed with time and included family members (55.6%), neighbors or friends (24.4%), gangs (4.4%), and someone unknown (44.4%). Nineteen patients thought their caregivers were the persecutors. Patients had various responses to their persecutory delusions, including physical aggression (40.0%), guardedness (17.8%), refusal to eat (15.6%), agitation (13.3%), calling for help (13.3%), carrying weapons (11.1%), locking doors (8.9%), running away from home (8.9%), suicide attempts (4.4%), and others (8.9%). After admission to the psychiatric ward, 8 patients exhibited physically aggressive behaviors toward medical staff or other patients. Seven were uncooperative with treatment or checkup. Two patients were worried that family members would be killed.

Table 1. Characteristics of Demented Patients With and Without Persecutory Delusions[a]

Characteristic	Persecutory Delusions: With (N = 45)	Persecutory Delusions: Without (N = 122)	Statistic	df	p Value
Age, y, mean ± SD	75.0 ± 7.1	73.6 ± 6.1	t = 1.11	69	.270
Sex, male	33 (73.3)	85 (69.7)	$\chi^2 = 0.21$	1	.645
Age at onset, y, mean ± SD	72.0 ± 7.2	70.4 ± 6.6	t = 1.37	165	.172
MMSE score, mean ± SD	12.7 ± 6.5	12.2 ± 6.2	t = 0.47	75	.637
Delusions					
Theft	33 (73.3)	59 (48.4)	$\chi^2 = 8.29$	1	.004
Jealousy	16 (35.6)	14 (11.5)	$\chi^2 = 12.93$	1	< .001
Hallucinations					
Auditory	14 (31.1)	18 (14.8)	$\chi^2 = 5.68$	1	.017
Visual	21 (46.7)	23 (18.9)	$\chi^2 = 13.11$	1	< .001
Physical aggression	30 (66.7)	52 (42.6)	$\chi^2 = 7.60$	1	.006

[a]All values shown as N (%) unless specified otherwise. Abbreviation: MMSE = Mini-Mental State Examination.

DISCUSSION

The prevalence rate of persecutory delusions (26.9%) in dementia in this study is similar to that reported by Binetti et al. (24.2%).[10] In another study of Alzheimer's disease, persecutory delusions were reported in 31.8% of patients.[4] Our sample was made up of geropsychiatric inpatients, and this might lead to an overestimation of persecutory delusions. Our study found that persecutory delusions occurred not only in Alzheimer's dementia and multi-infarct dementia but also in dementia NOS and found no significant difference in the prevalence rate of persecutory delusions among these 3 types of dementia.

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These findings suggest that persecutory delusions are universal problems in various types of dementia. Since cognitive impairment is the only common psychopathology in different types of dementia, it may play an important role in the development of persecutory delusions.

Our study found a significant association between persecutory delusions and other psychotic symptoms, including delusions of theft, jealous delusions, visual hallucinations, and auditory hallucinations. Thus, these symptoms may have a similar causal relationship or share common pathogeneses. Previous reports found that deluded demented patients often had more than one type of delusion.[5,11] Rockwell et al.,[12] in their study of delusions in a large cohort of Alzheimer's disease patients, also found that delusional patients had a higher prevalence of hallucinations than their nondeluded counterparts.[12] These findings might indicate that, in geriatric patients with simple persecutory delusions and the simultaneous presence of other delusions, dementia should be included in the differential diagnosis.

Three quarters of our patients developed persecutory delusions within 2 years after the onset of dementia. This finding is compatible with the reports of Binetti et al.[10] and Cooper et al.[13] that delusions often occur early in dementia. However, some studies found that delusions were more prevalent in severely demented patients.[14–16] There may be 3 explanations for this discrepancy. First, misidentifications of persons and/or objects by patients that often develop in the last stage of dementia have sometimes been included as delusions.[14] Second, although delusions can develop at the early stage of dementia, they may persist to the late stage. Third, patients with delusions often have had more rapid cognitive decline and have been rated as having severe cognitive impairment during study.[17]

Persecutory delusions were simple in this series of demented patients. Cummings[2] has suggested that delusions in demented patients are simple because cognitive integrity is a prerequisite for elaboration of complex delusional beliefs. In this study, 19 of 45 patients suspected that their caregivers were the persecutors. In our previous study of delusions of theft, half of the deluded patients thought that their caregivers were responsible for the theft.[6] Caregivers may be attacked or accused by patients because of the patients' delusions. One patient in this study switched his imagined persecutors over time depending on who took care of him.

The delusional experiences reported in this study varied a great deal in terms of the patients' responses. Delusions are well-known precipitating factors for physical aggression.[3,4,18] Physically aggressive behaviors were the most commonly identified response (40.0%) to persecutory delusions in our patients and sometimes led to a patient's referral to psychiatric admission. Five patients in this study carried weapons such as a knife or pair of scissors. Mendez[19] reported the cases of 2 patients whose dementia came to medical attention after their delusions led to the use of a gun. Our findings again stress the danger of access to weapons by deluded patients. Gilley et al.[18] demonstrated that the presence of delusions rather than hallucinations significantly predicted the presence and frequency of physical aggression. They suggested that this fact is likely due to the persecutory nature of most delusional ideation in Alzheimer's disease. In our previous study,[3] we found that persecutory delusions rather than delusions of theft or hallucinations were associated with aggression. In light of these findings, we suggested that the content of the hallucinations rather than the modalities might be more important in the prediction of violence. Further study is needed.

Some patients in this study did not show aggression but found ways to protect themselves from their perceived persecutors. Seven patients refused to eat because they feared being poisoned. Four patients ran away from home for fear that they would be caught or killed. Attempted suicide due to the delusions was found in 2 patients in this study. Jorgensen[20] reported that patients with delusional disorders have a risk of suicide that is 31.5 times greater than that of the general population. This finding suggests that demented patients with persecutory delusions should be evaluated early so that therapy can be given to patients at high risk. Another finding of our study is that patients with persecutory delusions often exhibited physically aggressive behaviors toward medical staff or were uncooperative with treatment. In the treatment of deluded patients, staff should be alert to the fact that patients often imagine that their caregivers are also their persecutors.

There are some limitations in this study. First, half of the demented patients were veterans who have characteristics different from those of the general population. The results may not generalize to all demented patients. Second, the high percentage of psychotic symptoms in this study may come from the sample source (geropsychiatric ward) and the duration assessed (from the onset of illness). Further study in the community population is needed. Third, our sample consisted of Chinese patients, 70% of whom lived with their families. In traditional Chinese culture, the elderly have high respect and receive the best care in the family. Such factors may influence patients' admission. It would be of interest to study the cultural factors affecting the decision to hospitalize demented patients.

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