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Neurological and Psychiatric Practitioners' Views on Alzheimer's Disease and Treatment Thereof

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Key Words
Alzheimer's disease · Antidementia drugs, efficacy · Patient-caregiver dyad

Abstract
Background: General views of practitioners shape medical routine. This study surveyed general views of neurological and psychiatric practitioners in Germany on Alzheimer's disease (AD). ***Methods:*** 850 surveys were distributed and 637 (75%) recovered. ***Results:*** 36% of practitioners reported not having used therapies for medical conditions other than dementia in patients with AD for reasons of limited compliance in these patients. Efficacy of antidementia drugs (donepezil, galantamine, memantine, rivastigmine) was rated on a 5-point scale (very good, good, satisfactory, sufficient, insufficient) regarding memory, attention and concentration, aggression, depression, activities of daily living, and dependency on caregivers. 87% of practitioners reported an at least satisfactory effect on at least 2 domains. Practitioners estimated that about 20% of caregivers are treated for psychiatric disorders such as depression. Practitioners that were more aware of caregivers' needs for psychiatric treatment more frequently reported positive feedback of caregivers concerning improvement of the patients in everyday life. Nursing home admission was estimated to result from both progression of dementia and diminished forces of the caregivers. ***Conclusions:*** Neurological and psychiatric practitioners perceive antidementia drugs as effective in multiple domains in AD. Appreciation of the overall success of treatment requires consideration of the patient-caregiver dyad.

Introduction

Dementia is one of the most common diseases of old age [1] affecting up to 20% of the population depending on age and diagnostic criteria [2]. The most common cause of dementia is Alzheimer's disease (AD) [3]. AD presents with memory impairment at onset [4, 5] but then progresses to bring about a wide spectrum of cognitive and behavioural symptoms [6, 7]. Guidelines for diagnosis and treatment of AD have been issued by several Medical Associations. Recent guidelines unanimously recommend the use of antidementia drugs upon diagnosis of AD [8–10].

Frequently, practitioners in private practice incompletely adhere to guidelines issued by Medical Associations [11–14]. Further research is needed to explore in depth the reasons for discrepancies between guidelines and everyday practice [15]. Undoubtedly, however, the set of attitudes, beliefs, and prior experience of practitioners with specific treatments shape medical routine [16].

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Acetylcholine is a major neurotransmitter in the hippocampus [17]. Impairment of the cholinergic system contributes to memory failure in aging and AD [18]. With functional magnetic resonance imaging it can be demonstrated that hippocampal neuronal recruitment on inhibition of acetylcholinesterase is improved in patients with amnestic mild cognitive impairment, often regarded as an early form of AD, and AD itself [19, 20]. In addition, an overexcitation at glutamate receptors is regarded as one of the processes involved in the progression of AD [21]. Accordingly, drugs that increase cholinergic neurotransmission (donepezil, galantamine, rivastigmine) or decrease glutamatergic excitation (memantine) are used to treat patients with AD. Assessment of the clinical data by the Cochrane Collaboration and review of the evidence by several Medical Associations conclude that acetylcholinesterase inhibitors should be used in mild to moderate AD and memantine in moderate to severe AD [8–10, 22–24].

Although treatment guidelines come to similar conclusions, adopting them in everyday life remains partial and only a fraction of patients with AD are treated with antidementia drugs [25]. Thus, it was the goal of the current survey to characterize the general views of neurological and psychiatric practitioners on AD and the therapy thereof.

Materials and Methods

Data included in this study were obtained according to institutional guidelines and the principles outlined in the Helsinki Declaration.

Survey and Participants

The survey comprised questions on diagnosis and treatment of AD as well as questions on patient and caregiver issues. Surveys were handed directly to the neurological and psychiatric practitioners in Germany from September 22, 2007 to December 14, 2007 via the field staff of Janssen-Cilag, Germany. Each employee of the field staff was allotted 10–12 surveys (total n = 850). They were instructed to randomly distribute the surveys on their next visits to the offices of neurological and psychiatric practitioners. Surveys had to be returned by December 21, 2007. In accordance with German Law, an allowance of EUR 50 was paid to the practitioner for each completed survey returned until the given deadline. 637 of 850 surveys (75%) were returned by this time.

Data Analysis

All statistical analyses were carried out using the statistics program SPSS (SPSS 15.0 for Windows, Chicago, Ill., USA) with testing procedures indicated in the text and legends. Neuropsychological data and subjective estimates were compared using a non-parametric test (Mann-Whitney U test). The alpha level for all tests was set at $p = 0.05$.

Results

Characterization of Patient Issues

On average, physicians estimated to care for 93 ± 82 (mean ± standard deviation; median 72) patients with AD. Estimates of the proportion of subjects with mild, moderate, and severe AD were 26.1 ± 15.8, 42.1 ± 14.9, and 31.9 ± 17.4%, respectively. In physicians who reported to care for more than 100 patients, the number of patients with severe AD was larger (Mann-Whitney U = 3,142.5; $p = 0.012$). In this group of physicians, the proportion of patients living in nursing homes was 49.4% while it was 36.7% (Mann-Whitney U = 24,186; $p < 0.001$) in physicians with less than 100 AD patients. In contrast, the number of patients living with relatives was larger in the group of physicians caring for less than 100 patients (51.0%) than in the group of physicians caring for more than 100 patients (40.5%; Mann-Whitney U = 26,290.5; $p < 0.001$).

Practitioners reported that 97% of their patients with AD had memory impairment, 57% behavioural disturbances, and 67% were reported to need more than 1 h of care by their proxies per day. 36% of physicians reported not having used therapies for medical conditions other than dementia in patients with AD for reasons of limited compliance in these patients.

Characterization of Caregiver Issues

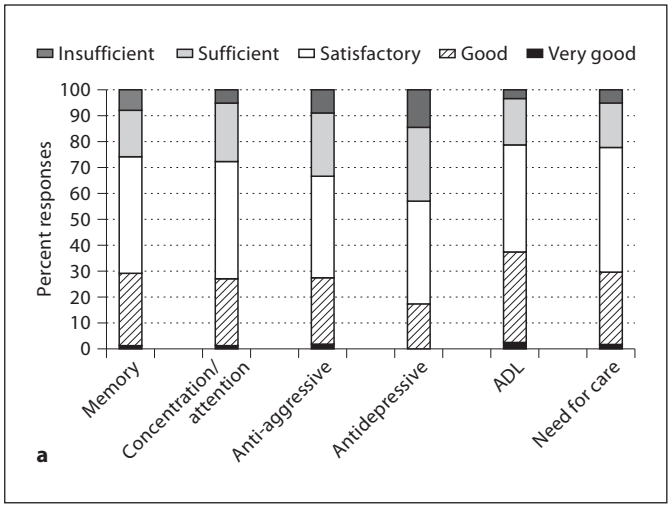
39.9 ± 22.5% of patients were reported to live in a nursing home, 48.4 ± 22.1% to live with a relative, and 11.8 ± 11.8% to live alone. Physicians estimated that the time burden of care for the caregiver of a patient with mild AD was about 2.4 ± 2.0 h per day.

Physicians reported that 19.8 ± 15.4% of caregivers are treated for neuropsychiatric diseases, e.g. depressive symptoms. Moreover, it was reported that 12.0 ± 9.8% (median 10) of caregivers suffered from dementia themselves.

Perception of Treatment Effects by Neurological and Psychiatric Practitioners

Practitioners estimated that the majority of their patients were treated with antidementia drugs (74.2 ± 22.5%), but also with neuroleptics (35.2 ± 18.4%), sedatives (17.3 ± 17.3%), and antidepressants (22.5 ± 14.9%).

With regard to antidementia drugs, therapeutic efficacy had to be judged on a 5-point Likert scale (very good, good, satisfactory, sufficient, insufficient) with respect to therapeutic effects on memory, attention, aggression, depression, activities of daily living, and dependency on



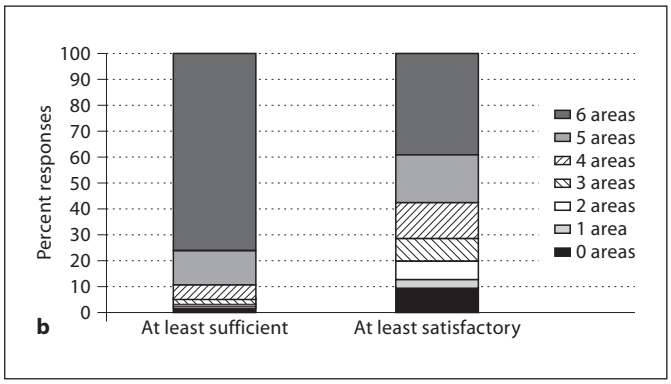


Fig. 1. a General view of neuropsychiatric practitioners on the efficacy of antidementia drugs. For each domain [memory, concentration/attention, anti-aggressive effects, antidepressive effects, activities of daily living (ADL), and need for care by caregiver] the practitioner had to rate efficacy on a 5-point Likert scale (very good, good, satisfactory, sufficient, insufficient). **b** General view of neuropsychiatric practitioners on the efficacy of antidementia drugs. Six domains were rated (as mentioned in **a**). For each domain [memory, concentration/attention, anti-aggressive effects, antidepressive effects, activities of daily living (ADL), and need for care by caregiver] the practitioner had to rate efficacy on a 5-point Likert scale (very good, good, satisfactory, sufficient, insufficient).

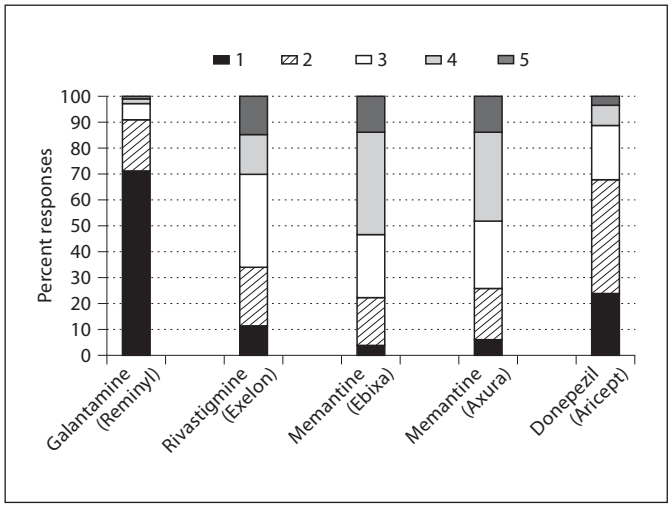


Fig. 2. Physicians were asked to rank the overall efficacy on dementia-related symptoms for antidementia drugs [4 antidementia drugs sold in Germany under 5 trade names (given in brackets)]. The practitioners had to name the trade names of drugs matching real-life prescription behaviour. 1–5 = Best to least effective.

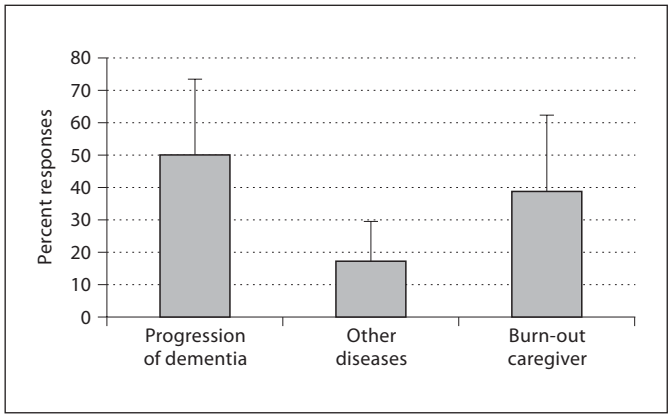


Fig. 3. Reasons for relocation into nursing homes as estimated by neuropsychiatric practitioners.

caregivers. With regard to these domains an at least satisfactory treatment response was found concerning memory in 74.2%, attention in 72.2%, aggression in 66.7%, depression in 57.2%, activities of daily living in 78.6%, and dependency on caregivers in 77.9%. An at least satisfactory effect on at least 2 of any of the 6 domains was reported by 87.4% of respondents (fig. 1).

Physicians were asked to rank the overall efficacy on dementia-related symptoms for antidementia drugs (4 antidementia drugs sold in Germany under 5 trade names). Physicians ranked overall therapeutic efficacy best (score 1, 2, and 3) in about 90% each for galantamine and donepezil in about 70% for rivastigmine and in about 50% for memantine (fig. 2).

Physicians estimated that about half of the patients report back improvement on antidementia therapy (49.5 ± 24.1%; range 0–100; median 50). Comparing the response of physicians who estimated more than the median of

caregivers to report back improvement on antidementia therapy it was found that this was also the group of physicians who were more likely to treat the caregiver, e.g. with antidepressive treatment (low vs. high antidementia treatment response group: report of neuropsychiatric treatment in 17.8 ± 14.3 vs. 22.5 ± 16.1%; U = 34,692; $p < 0.001$).

The reason for relocation of patients to a nursing home was judged to be mostly related to worsening of dementia symptoms in the patient but also to reasons of diminished abilities of the caregiver (fig. 3).

Discussion

Although recent guidelines concur that early diagnosis and treatment of AD are warranted, the general practice falls short of these recommendations [11]. It was therefore the aim of this survey to examine the overall views of neuropsychiatric practitioners in Germany on AD and treatment thereof rather than their knowledge or actual prescribing behaviours.

Some of the views found out in the analysis of this survey can be compared to a market analysis of prescribing behaviours of German neurological and psychiatric practitioners performed by IMS Health [unpublished data, February 2008]. IMS Health monitors and analyses prescribing behaviours of 92 representative neurological and psychiatric practitioners. In the present survey, neurological and psychiatric participants estimated to care for about 90 patients with AD which is in good accordance with market data with an average number of about 78 patients with AD/dementia [IMS Health, unpublished data, February 2008].

In the present survey, neuropsychiatric practitioners estimated to treat about 70% of their patients diagnosed with AD with cholinergic drugs or memantine. In contrast, data in the literature suggest that only about 20% of patients are treated with antidementia drugs [26]. There are two obvious reasons for this discrepancy. One reason is that the data published refer to data about 10 years ago and may not reflect the change of prescribing behaviour that occurred in recent years. In fact, the market analysis indicates that about 50% of patients diagnosed with AD by neurological and psychiatric practitioners in private practice are treated with antidementia drugs [IMS Health, unpublished data, February 2008]. Another reason may be that the present survey for reasons of practicality was confined to the assessment of the general views of neurologists and psychiatrists in private practice. It is known that adherence of specialists to current guidelines is closer than that of general practitioners [11]. In accordance with this finding, the market analysis indicates that the proportion of AD patients treated by neurological and psychiatric practitioners with antidementia drugs is almost twice as high as the proportion of patients in the care of general practitioners in private practice [IMS Health, unpublished data, February 2008].

Contrary to scepticism fomented by discussion on the relevance of treatment differences in scores of cognitive tests, the general view of neuropsychiatrists on treatment efficacy of antidementia drugs is very affirmative. Among the standardized scales to assess treatment differences cognitive scales have the best methodological foundation concerning validity, objectivity, and reliability, but their ecological validity and relevance for everyday life has been questioned. On the other hand, some of the scales in non-cognitive domains, e.g. the clinical global impression scales, where alleviation of everyday symptoms is more intuitive than in cognitive scales, have a known limited sensitivity concerning change. Analysis of the overall view of the neuropsychiatric practitioner reveals that about 90% perceive efficacy of these drugs in at least 2 domains as satisfactory. Some methodological limitations, however, need to be considered. Even though recovery of the present survey was beyond 75%, it cannot be ruled out that physicians not interested in antidementia drug treatments or those who made less favourable experiences with treatment did not respond. Moreover, estimation of efficacy by practitioners may be biased because patients without subjective treatment response may not come back to the practitioner's office. Furthermore, the results may also have been influenced by the construction of the Likert scale for the judgement on the efficacy of drugs. Considering the unanimous recommendations of Medical Societies to use antidementia drugs in AD patients the scale was constructed to survey the views of neurological and psychiatric practitioners on the degree of improvement (insufficient, sufficient, satisfactory, good, very good) as opposed to a scale with an equal amount of positive and negative options. In addition, it cannot be ruled out that payment of the practitioners to complete and return the survey influenced the results. Despite these limitations, however, the numbers obtained are in good harmony with the data from the market analysis on prescribing behaviour of neurological and psychiatric practitioners. Considering that the proportion of AD patients treated by neurological and psychiatric practitioners with antidementia drugs is almost twice as high as the proportion of patients in the care of general prac-

titioners in private practice [IMS Health, unpublished data, February 2008] it will be interesting to obtain comparable information on the general impression of general practitioners, but a comparative analysis was beyond the scope of the present survey.

Cognitive deficits and dementia have wide-reaching implications not only concerning antidementia treatment but treatment of other medical conditions as well. More than a third of neurological and psychiatric practitioners reported not having used therapies for medical conditions other than dementia in patients with AD for reasons of limited compliance in these patients. This may be one reason why in the end the cost for treatment and complications in non-CNS diseases is higher when patients are not treated for their cognitive deficits [27].

Worsening of dementia symptoms is the most frequent reason for relocation of the patients into nursing homes, but almost as frequent are diminished abilities of the caregivers. Together with the prevalence of neuropsychiatric syndromes in caregivers of patients with AD this urges an improvement in therapeutic programs integrating diagnosis and treatment together with social support in both patients and caregivers [28].

In summary, we conclude that the majority of neuropsychiatric practitioners find antidementia drugs effective in multiple cognitive and non-cognitive domains in AD. Overall success of AD treatment, however, can only be assessed with consideration of the patient-caregiver dyad.

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