End-of-Life Care of Persons With Dementia

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Many clinicians with different training and practice are involved in the care of persons with dementia. Whereas neurologists and psychiatrists focus their attention on the early phase of dementia, geriatricians and palliative care specialists are particularly involved at the end of demented patients' lives. To summarize the progress of knowledge in this field, it seems possible to answer four fundamental questions.

When? Several longitudinal studies of cohorts of demented and nondemented patients showed clearly that dementia is a risk factor for early death. There are no survival differences between Alzheimer's and Lewy body disease patients. Patients with vascular dementia have the worst prognosis. These results need to be analyzed with consideration of associated comorbidity, types and intensity of care, and dementia treatment.

Why? Studies conducted on the basis of death certificates appear to be biased. A large autopsy study performed in the geriatric department of Geneva University Hospital showed no difference existed in immediate causes of death between demented and nondemented hospitalized old patients. On the other hand, cardiac causes are significantly more frequent in vascular dementia than in Alzheimer's disease or mixed dementia patients.

How? Deaths of demented patients raise a lot of ethical considerations. It is always difficult to know demented patients' awareness of the end of life. It is really difficult to accompany these patients, with whom communication is essentially nonverbal. During this delicate phase of the end of life, how can formal health professionals help the family members who are afraid of both death and dementia?

And after? Suffering of family members and caregivers has to be strongly considered. This goal includes the improvement of our communication skills with the patient, and the facilitation of interdisciplinary exchanges with the caregiver's team and with the family members to allow acceptance of the death.

"DEMENTIA is certainly one of the most dramatic medical and economic challenges that our society will face in the coming years" (1). If the specificity of care appears incontestable at the early stages of the disease (959,000 new cases of dementia per year in the United States in 1994—ninth most frequent disease in incidence) (2), the care at the end of life of the 7,082,000 existing demented patients (eighth most prevalent disease in the United States) (2) has to be better considered, provided, and studied. Geriatricians and palliative care specialists are particularly concerned because, for each decade after the sixth, the number of affected people doubles, so that an estimated 30% of the 85+ population is affected by Alzheimer's disease (AD) (3,4). The end-of-life care of demented patients needs to reach the best possible quality. Its intensity has to be appropriate, timely, and ethically adapted, considering the multiple circumstances, the family concern, and the different environmental conditions (living at home or in an institution).

To highlight the importance of the end-of-life care of demented patients, we will consider the survival of demented versus nondemented patients and the causes of death of patients with or without dementia, before examining specific ethical issues of the end of life involved in the care of cognitively disturbed patients. A discussion of the suffering of family members and caregivers will conclude this literature review.

SURVIVAL OF DEMENTED PATIENTS

A 5-year follow-up of Canadians older than 65 years living in the community (2923 with and 7340 without demen-

tia) showed that elderly people with dementia have clearly increased mortality rates compared to elderly people without cognitive impairment in all age/gender categories (5). Three-year and 5-year mortality risk of demented patients living in the community reached 45% to 48% (6,7), and 70% (8), respectively. Median length of life from diagnosis was reported to be 5.3 years (9) and 5.4 years (10) in two prospective studies. But the median survival after onset of dementia (and not time of study entry) appears shorter, after adjustment for length bias, than previously stressed: 3.3 years (95% confidence interval [CI] 2.7–4) (11). A 3-year follow-up of 5362 community-dwelling Italian people between the ages of 65 and 84 years confirmed that the relative risk of dying (Cox proportional hazards model) for demented patients was higher (risk ratio [RR] = 3.61 [CI 2.55–5.11]) than for a patient with cancer (RR = 2.01 [CI 1.20–3.38]), heart failure (RR = 1.87 [CI 1.27–2.76]), or diabetes (RR = 1.62 [CI 1.12–2.34]) (12). In the same study, institutionalization appeared to be more dangerous (RR = 4.17 [CI 2.20–7.94]) than any pathological process considered separately (including dementia—see above). That is to say, demented patients who are frequently institutionalized at the advanced stage of the disease are really at the highest risk of death (12). This relative risk is twice as high for men compared to women (8,12) and increases with age, severity of dementia, and its disability consequences (7,13). The dementia etiology is also important to consider. Vascular dementia (VAD) has a higher 5-year risk of mortality than AD (8), while Lewy body disease has the same 3-year mortality

risk as AD, considering the age at onset and the age at death (14). But the number and the importance of associated diseases were not known in this study and could have explained these findings, particularly the worst survival prognosis of patients with VAD.

Moreover, independent of the medical conditions, the types of social care seem to affect the survival of demented patients. Participation at a day center as well as the active support of family members appear to significantly decrease the mortality risk, whereas the benefit of Meals on Wheels on survival is not at all proved (6). This raises the question of whether individual emotional support of demented patients is more important than the type and quantity of care?

Another interesting debate relates to the impact of the new cholinesterase inhibitors on the survival of demented patients. The safety of this category of drugs was demonstrated on a total of 208 demented patients treated with tacrine (15). Treatment with tacrine, at least at doses more than 80 mg/d, appeared to be associated with a reduced likelihood of nursing home placement (16). This tendency is supported by the results of a cost analysis based on a decision-analytic model constructed on the milestones in the progression of AD (17). These various analyses suggested a trend for lower mortality for patients receiving more than 120 mg/d of tacrine (16,17). This tendency was confirmed by a recent retrospective cohort study of 1449 users of tacrine compared with 6119 nonusers matched on facility, date of tacrine use, level of cognitive function, and dementia diagnosis (18). The survival hazard rate ratio (HRR) was 0.76 (95% CI = 0.70–0.83) for the users of tacrine, and those who used higher doses (>80 mg/d) experienced the greatest survival advantage (HRR = 0.74; 95% CI = 0.56–1.0) (18). These data on increased survival of AD patients treated with tacrine require us to reconsider the negative impact of institutionalization (see above [12]) and raise the same debate with the other cholinesterase inhibitor drugs (19). Moreover, the economic impact of such treatments needs to be reevaluated.

CAUSES OF DEATH OF DEMENTED AND NONDEMENTED PATIENTS

At the end stage of the disease, persons with dementia are often bedridden and are vulnerable to developing other medical conditions and dying earlier than if they were not demented (20). This is consistent with several studies reporting that the main causes of death of demented patients are pneumonia and cardiovascular disease (21–24). Bronchopneumonia occurred in severely impaired patients more often with AD (70.9%) than with VAD (25). Heart disease and stroke predominated in the less cognitively impaired patients with VAD (23). However, the above data were almost exclusively based on death certificate reports, which may not be sufficiently reliable. Morbidity and mortality statistics arising from death certificates are seriously flawed, because of the omission of important information (26). In practice, deciding which disorders should be included on death certificates reflects the opinion of the doctor completing the form, and very often underlying causes of death are not mentioned (26). This can explain why comparison of data from death certificates completed by either attending physicians or by doctor-coroners and necropsy reports shows large deviations in causes of death ranging from −91.6% to +74.8% (27). The Canadian Study of Health and Ageing proves that the sensitivity of the death certificate and the question regarding diagnosis of dementia was low (33% and 44%), although their specificity was very high (93%) (28). Similar discrepancies have also been reported by others, resulting in increased interest in geriatric autopsy studies (29,30). Pathological series are scarce in the literature. An autopsy series based on 72 cases showed that pneumonia was the immediate cause of death in 72% of clinically demented patients, while cardiovascular diseases represented only 24% of the causes of death (31). Another complete autopsy study performed on 120 hospitalized demented VAD ($n = 34$), mixed dementia (MD; $n = 65$), and AD ($n = 21$) neuropathologically confirmed and 222 nondemented elders (mean age 84.9 ± 6.9 years) showed that the number of reported causes of death per patient was 1.7 in both groups (32). Among the reported causes of death in each patient group, bronchopneumonia was identified as the main immediate cause of death in 40.8% of demented and 34.2% of nondemented patients. Infections of various origins, including pulmonary tract infections, represented 53.3% and 48.6% of the causes of death in demented and nondemented patients, respectively. The combination of cardio- and cerebrovascular diseases (cardiac failure + pulmonary embolism + myocardial infarction + central nervous system hemorrhage) corresponded to 68.2% and 73.7% of the identified immediate causes of death in demented and nondemented patients, respectively. No difference in infectious causes was observed between the various dementia types, although the combined cardio- and cerebrovascular causes of death were significantly more frequent in VAD (91.0%) than in MD (61.3%) and AD (52.1%) cases ($p = .001$). The major differences were in the rate of cardiac failure in these various pathological cases: VAD (44.1%), AD (19%), and MD (15.3%) (32).

In opposition with current opinion (33), this study (32) strongly suggested, as have many others (29,34–36), that dementia can only be considered as an underlying cause of death. Moreover, demented patients died from the same causes as nondemented hospitalized subjects, when quality of care was not influenced by the cognitive status.

ETHICAL CONSIDERATIONS OF END-OF-LIFE ISSUES OF DEMENTED PATIENTS

Dementia is associated with a wide variety of underlying conditions: poor nutrition resulting from diminishing intake of fluids and liquids, urinary incontinence, skin breakdown, and various types of infections that accelerate the progression of the common age-associated diseases (diabetes, chronic heart failure, hip fracture) and precipitate the demented patient into functional dependency (37). Although the end-of-life issues are similar in demented and nondemented patients (see above), the intensity and types of care are really different in these two patient groups. A 13-month retrospective study compared the hospital charts of two kinds of end-of-life patients: demented ($n = 80$) and metastatic cancer patients ($n = 84$) (38). Complex invasive or

noninvasive diagnostic tests were significantly more frequently used in cancer than in demented patients (respectively, 41% vs 13%—$p < .002$ and 49% vs 23%—$p < .02$), while enteral tube feeding and antibiotics for an identifiable infection were significantly less often prescribed in cancer than in demented patients (respectively, 9% vs 26%—$p < .02$ and 45% vs 65%—$p < .004$) (38). Cardiopulmonary resuscitation was practiced with the same frequency in the two different groups of patients (38). These disturbing findings raise the difficult issues of appropriate quality of care at the terminal stage for demented patients.

Some of the most troublesome complications of advanced dementia, and particularly during the terminal phase of dementia, are the behavioral symptoms: physical aggression and delusions, wandering, agitation, sleep problems, and anxiety are among the most important (39). "Behavioral and psychological symptoms of dementia" (BPSD) is a recently coined term to describe this heterogeneous range of noncognitive symptoms occurring in people with dementia of any etiology (40). They result in emotional suffering for patients and caregivers, excess disability and mortality, premature institutionalization, and increased financial cost (40). Antipsychotic neuroleptics are the most commonly used medications for the treatment of psychotic symptoms in AD. Although a vast arsenal of antipsychotics and antidepressants is available to treat behavioral symptoms of AD, none of these drugs has been approved specifically for this purpose. Nonetheless, physicians prescribe such medications without proper labelling and despite a dearth of published controlled studies supporting this use. A meta-analysis of the available placebo-controlled trials by Schneider and colleagues in 1990 (41) found that the use of these drugs produced only a modest effect and that no single antipsychotic medication had greater efficacy than another. However, more recent data have shown a significant effect of atypical antipsychotics in reducing behavioral disturbances (42,43). Side effect profiles and comorbidities must also be considered when prescribing these drugs. Several studies have shown that cholinesterase inhibitors also reduce behavioral and psychological symptoms including agitation, apathy, anxiety, pacing, and visual hallucinations (9,10). Nonpharmacological intervention is also an important part of dementia care. Few controlled trials have been published on the effectiveness of various nonpharmacological strategies (44–46).

Frequently, BPSD is the atypical clinical presentation of pain and suffering (47). Assessment of discomfort in 104 late-stage demented patients (mean age 85 years) with the Assessment of Discomfort in Dementia scales showed that the most frequently displayed behaviors were tense body language, sad facial expression, persevering verbalizations, and verbal outbursts (47). These nonverbal cues and subjective states are very difficult to identify. A French study stressed this point by comparing the estimation of pain recognition and adequate treatment in hospitalized late-stage demented patients: Physicians thought they recognized pain in 96% of the cases, assistant nurses estimated that it was true only in 68%, and nurses were even more severe, thinking that pain was not recognized and not adequately treated in 44% of the cases (48). Moreover, the same study shows that physicians estimated that the care decision was really the result of an interdisciplinary consensus in 87% of the cases, while, respectively, assistant nurses and nurses thought that this was the case in only 55% and 51% of the cases (48). These differences attest to the inability of the caregivers to identify pain and suffering in advanced dementia patients. The main consequence is the tendency to undermedicate pain in these patients (49,50). This has led to the stressing of pain as the fifth vital sign with the hope that this will increase awareness of inadequately treated pain in older persons (51). Unfortunately, instead of providing pain control and spiritual support during the dying process, there is a tendency in the medical system to concentrate on life-prolonging interventions (52). Four main medical interventions are considered as life-prolonging interventions and are indeed raising ethical debates: cardiopulmonary resuscitation, renal dialysis, tube feeding, and antibiotic prescription. At the advanced stage of dementia, only enteral nutrition and antibiotic use raise an ethical debate.

A review of evidence of the usefulness of tube feeding in patients with advanced dementia including all Medline peer-reviewed papers published between 1996 and 1999 found that tube feeding does not clinically improve important outcomes such as survival, functioning, risk of pressure sores, risk of infection, or risk of aspiration (53). However, it must be recognized that malnutrition and vitamin deficiencies may worsen dementia in some persons (54).

Infectious complications are very common causes of death in demented patients (32). The atypical clinical presentations of infection are frequent, and when the infection is recognized, antibiotic use needs to be discussed and integrated into the comprehensive assessment of the patient (physiological reserves, severity of dementia). Sometimes, the patient's discomfort is linked to an evident clinical infection, particularly a pulmonary tract infection. In this case, the antibiotic prescription is useful, whatever the dementia stage, but the antibiotic choice has to be accurate, adequate, and timely (55,56).

The anguish of end of life seen in all patients exists also in severely demented patients. The quality of terminal care of these patients is greatly dependent on the patient's awareness, which is very often fluctuating. Sometimes, the patient is confused and unaware of his or her condition; at other times, the patient knows that he or she is dying and attempts to communicate (57). What is the significance of this attempt? Is there any nonverbal hidden message? Is there any expression of a wish to die? Too often, these questions remain without valuable responses. This raises important and difficult ethical debates within the caregiver staff and with the family members who are always completely disappointed by the fluctuating mental status. The ethical concerns about palliative drug treatment of these demented patients can be reduced but never completely solved. Advanced health directive planning is probably the best mechanism for respecting the demented patient's prior self-determination (58). The role of euthanasia as practiced in Holland and Oregon is beyond the scope of this review.

SUFFERING OF FAMILY MEMBERS AND CAREGIVERS

Confronted with the terminal stage of life of a demented patient, family members and health care professionals face

two important fears: the fear of death and the fear of dementia (59). The mourning process itself is influenced by various factors, such as the symbolic role of the dying person, the unfulfilled requests, the death circumstances, and the quality of the last moments of life (60). In the case of death of a demented patient, the mourning process is different. The loss, the separation from a loved one who has been demented for several years, is even more difficult. The anticipation of the death, which was preceded by a social death, does not help the mourning process (60).

Thus, in the terminal phase of life of demented patients, it is important to try improving communication skills with the patient to facilitate interdisciplinary exchanges, to help family members, to clarify the inescapable fatal outcome of their loved one, and to better cope with their suffering. After the death, it is fundamental to support the family during the mourning process, which, in these cases, is always difficult. Often, mourning can lead to severe depression in family members (60).

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