Recognizing advanced disease

Recognition of advanced disease is a key, but difficult, skill required by all clinicians; lack of competence has serious consequences for patient, caregivers and health service. This article summarizes features of advanced disease and the impact of realistic prognostication.

This article focuses on people with progressive incurable conditions where there is a recognizable end stage with advanced disease. Those with general frailty and multiple comorbidities are also an important group whose palliative care needs are often overlooked but are beyond the scope of this article (Delamothe et al, 2010). Many patients wish to know and discuss their limited prognosis with their doctors and other members of their health-care team (Fallowfield et al, 2002). Practice has changed over the last 30 years from a culture when poor prognosis was rarely discussed (Barnes et al, 2006) to one which is more open.

General Medical Council (2010) guidance encourages discussion about end of life care with all patients 'approaching the end of life' – defined as all patients who are likely to die within the next 12 months. The guidance allows that some do not wish to talk about their future and, if so, this should be respected. It is also important to recognize that some people may live with advanced disease at the 'end of life' for longer than 12 months: this timeframe is only intended as a guide. Recognition of advanced disease in this situation has a similar impact for treatment planning and decisions, and access to palliative care support.

Why is it important?

Recognition of advanced disease allows appropriate health care to be prioritized and planned in accordance with patients' informed preferences. Such planning may help to avoid inappropriate hospital admissions in the last months of life and tailor interventions to those where overall net benefit remains. Supportive and palliative care services may be accessed as required for the patient and his/her caregiver. The opportunity is given for people to discuss their wishes for care, including preferences for place of care at the end of life and where they would like to die; if preferences are known, they are more likely to be supported (National End of Life Care Programme, 2007; Delamothe et al, 2010). Currently only 19% of patients in the UK die at home (National End of Life Care Intelligence Network, 2010) (*Table 1*).

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There are also important administrative and financial benefits for patients if end-stage disease is recognized. In the USA a prognosis of less than 6 months is a requirement of eligibility for hospice care. In the UK, a patient with a prognosis of months, regardless of diagnosis, has fast track access to certain benefits if the appropriate form is completed by his/her doctor (Onac et al, 2010). It also allows a framework for more cost-effective use of health resources. Most importantly improved recognition of advanced disease is the first step in improving quality of care at the end of life, which is often lacking in clinical practice (Connors et al, 1995).

Plan for the worst and hope for the best

Recognition of advanced disease does not mean that all active treatments be stopped in favour of palliative care. An 'either /or' approach is not recommended, but rather an extended team model of working. Palliative care is often most appropriately integrated within management of the disease itself. Failure to recognize that the disease is more advanced and concentration solely on disease-specific management will deny the patient the overarching care that takes the whole situation into account. Patients could be harmed by erroneous prediction of imminent death and withholding treatment, but the more common problem in practice is distress for patients and their families resulting from futile treatment (Christakis, 1999). For many chronic conditions, specific triggers along the disease trajectory, such as a hospital admission, have been suggested to prompt a full assessment including the need for a palliative approach and referral to specialist palliative care services (Goodlin et al, 2004; Boyd et al, 2009; Jaarsma et al, 2009; Oliver et al, 2010; Pinnock et al, 2011).

Table 1. Place of death: proportion of deaths in England, 2005–7

Over half of people die in hospital (58%; an average of 277 055 per year)
Only 19% dying in their own residence (an average of 90 517 people per year)
An average of 23 608 (5%) people per year die in a hospice, 41 969 (9%) in a nursing home and 32 138 (7%) in an old people's home
9432 (2%) die elsewhere

From National End of Life Care Intelligence Network (2010)

Foreseeing and foretelling

Recognition of advanced disease is only the first step in improving patient care. This needs to be sensitively and appropriately communicated to patients and their families. In the SUPPORT study, a multicentred randomized controlled trial of nearly 5000 seriously ill hospital patients, even when physicians were given detailed accurate information about their prognosis, many failed to recognize and act on that information, and only 15% discussed it with the patients and/or their families (Connors et al, 1995; Christakis, 1999). A recent systematic review of literature concerning conversations about end of life care between patients with heart failure and health-care professionals suggests that clinicians wait for cues from patients before raising end of life issues, while patients commonly wait for clinicians to raise these issues: as a result, the conversations rarely take place (Barclay et al, 2011).

Challenges in thinking about prognosis

Doctors find it difficult for many reasons to recognize that a patient is approaching the end of his/her life. There are societal norms with the avoidance of death and professional codes with the duty of the doctor as preserving life, thus death may be seen as a failure. Increased therapeutic options may make it tempting for clinicians to strive to prolong life, even if this is futile or merely prolongs the dying itself. Patients and their carers may not recognize that certain diseases such as chronic obstructive pulmonary disease or heart failure are associated with a poor prognosis and may not understand that further treatments are not possible or are inappropriate.

Prognostication is also difficult and prone to error and so often avoided by doctors, or when attempted, prognosis is over-estimated (Christakis, 1999). A systematic review suggests that physicians generally make the same errors in prognosis and by the same magnitude (Glare et al, 2003). Christakis (1999) challenges doctors to prognosticate about each patient they manage, and audit their practice. Although difficult, prognostication should be seen as a routine part of care. There is a risk that modern medicine has become obsessed with diagnosis and therapy resulting in prognosis being a neglected area of medicine lacking in research and teaching (Christakis, 1999).

The SUPPORT study, as well as demonstrating the poor communication described above, also showed that by failing to act on prognostic information, patients continued to receive futile treatment, and experienced poor quality of life and care at the end of life. Not only do clinicians require prognostication information but the judgement and courage to use it appropriately.

Disease trajectories: 'prognostic paralysis'

Different disease trajectories have been described for cancer, single organ failure and general frailty (Murray et al, 2005). These are important on a population level and for understanding the natural history of these diseases. However, there is much inter-patient variability and so they may be less helpful with the specific individual patient seen on the ward or in the clinic (Gott et al, 2007). There is much uncertainty when dealing with prognostication at the end of life which has resulted in some doctors feeling powerless and unable to act, described as 'prognostic paralysis' (Murray et al, 2005).

General poor prognostic features

Research into prognostication for advanced disease is limited. For advanced cancer there are some scoring systems available (Glare and Christakis, 2005). For other diseases, for example heart failure, information is available from clinical trials (Ekman et al, 2005; Boyd and Murray, 2010) but these may not reflect broader patient populations because of restrictions inherent in the trial eligibility criteria which make them difficult to apply to the patient in the consultation. There are clinical indicators which use information from hospice programmes in the USA and have been adapted for use by the Gold Standards Framework (*Figure 1*). A screening test advocated by the Gold Standards Framework is called the 'surprise question': 'Would you be surprised if this patient were to die in the next 6–12 months?' (Free et al, 2006; Boyd and Murray, 2010). The Gold Standards Framework or similar palliative care registers are used by over 90% of GP practices the UK to identify patients in the last years of life, assess their needs, symptoms and preferences and plan their care (Free et al, 2006; Boyd and Murray, 2010).

Worsening performance status is strongly associated with poor prognosis in patients with advanced illness, regardless of the diagnosis. Hospital admission, especially if repeated, for worsening organ failure may act as a prompt for clinicians to consider if the patient's disease is more advanced. Comorbidity is a significant predictive indicator of mortality and morbidity (Free et al, 2006). Weight loss greater than 10% over 6 months and serum albumin level <25 g/litre are also useful indicators of poor prognosis (Free et al, 2006; Boyd and Murray, 2010).

Disease-specific features

Some clinical indicators of advanced disease are outlined in *Figure 1*.

Cancer

Patients with metastatic disease or those with persistent or recurrent disease not amenable to anti-cancer therapies are defined as 'advanced disease'. Deterioration of performance status as a result of metastatic cancer and/or comorbidities and persistent symptoms despite optimal palliative oncology treatment or in those who are too frail for oncology treatment are signs of advancing disease (Free et al, 2006; Boyd and Murray, 2010).

Heart failure

This has a variable trajectory, but classically one of slow decline punctuated by acute deteriorations from which the patient may recover. Class IV New York Heart Association is associated with a poor prognosis, with a 25% 1-year mortality in one study (Goodlin et al, 2004). A Canadian study showed that newly admitted patients with heart failure of any class had a median survival of 2.4 years, but this dropped to only 3 months for the very unwell patients with a very high risk EFFECT-HF score. This score is calculated using information on age, admission characteristics (systolic blood pressure, respiratory rate, serum sodium, blood urea, haemoglobin), and comorbid conditions (cerebrovascular disease, dementia, chronic obstructive pulmonary disease, hepatic cirrhosis and cancer) (Ko et al, 2008).

Some patients die suddenly, which can occur with any class of heart failure. However, there are a group of patients who develop clear end stage disease, with worsening renal failure, inability to tolerate their heart failure medication, for example as a result of hypotension, and more frequent episodes of decompensation (Goodlin et al, 2004). Worsening symptoms, persistent hyponatraemia, hypoalbuminaemia, escalation of diuretic doses, and a rising brain natriuretic peptide estimation all point to deteriorating advanced disease (Goodlin et al, 2004; Ekman et al, 2005; Metra et al, 2007; Pocock et al, 2008). The sentinel feature of hospital admission and the importance of progressive New York Heart Association class and deteriorating performance status have been recommended as key triggers to re-assess stage of disease and aims of management (Boyd et al, 2009).

Figure 1. Supportive and palliative care clinical indicators.

General clinical indicators
- Performance status poor (limited self-care; in bed or chair over 50% of the day) or deteriorating
- Progressive weight loss (>10%) over the past 6 months
- Serum albumin level <25 g/litre
- Two or more unplanned admissions in the past 6 months
- Multiple comorbidities

Disease-specific clinical indicators

Cancer
- Performance status deteriorating as a result of metastatic cancer and/or comorbidities
- Persistent symptoms despite optimal palliative oncology treatment or too frail for oncology treatment

Heart failure
- New York Heart Association class IV heart failure, severe valve disease or extensive coronary artery disease
- Breathless or chest pain at rest or on minimal exertion
- Persistent symptoms despite optimal tolerated therapy
- Renal impairment
- Systolic blood pressure <100 mmHg and/or pulse rate >100 beats per minute
- Cardiac cachexia
- Two or more acute episodes needing intravenous treatment in past 6 months

Chronic obstructive airway disease
- Severe airways obstruction (forced expiratory volume in 1 second <30%)
- Meets criteria for long-term oxygen therapy (pulmonary artery oxygen content <7.3 kPa)
- Breathless at rest or on minimal exertion between exacerbations
- Persistent severe symptoms despite optimal tolerated therapy
- Symptomatic heart failure secondary to lung disease
- Body mass index <21 kg/m^2
- Increased emergency admissions for infective exacerbations and/or respiratory failure

Renal disease
- Stage 5 chronic renal disease (estimated glomerular filtration rate <15 ml/min)
- Conservative renal management as a result of multi-morbidity or patient choice
- Deteriorating on renal replacement therapy; persistent symptoms and/or increasing dependency
- New life-limiting condition or kidney failure as a complication of another condition or treatment

Dementia
- Unable to dress, walk or eat without assistance; unable to communicate meaningfully
- Increasing eating problems; receiving pureed or soft diet, supplements or tube feeding
- Recurrent febrile episodes or infections; aspiration pneumonia
- Urinary and faecal incontinence

Chronic neurodegenerative diseases
- Marked decline in physical status
- Swallowing difficulties
- Significant weight loss
- Recurring admissions
- Frequent infections

Adapted from Free et al (2006), Boyd and Murray (2010), Oliver et al (2010)

Chronic obstructive pulmonary disease

Figure 1 illustrates some clinical indicators for recognizing advanced chronic obstructive pulmonary disease, however, it can be challenging. A recent longitudinal interview study with patients with advanced chronic obstructive pulmonary disease suggested that a specific transition point to palliative care is meaningless (Pinnock et al, 2011). They suggest milestones throughout a patient's disease trajectory when a holistic assessment of palliative and supportive care needs be undertaken; an approach that could be applied to all chronic conditions. The milestones that were suggested by this study are: diagnosis, retirement on medical grounds, starting long-term oxygen therapy, hospital admission for an exacerbation of chronic obstructive pulmonary disease, or (from a clinician's perspective) a positive answer to the 'surprise' question (Pinnock et al, 2011). Again, increasing numbers of admissions, an increase in their frequency and length of hospital stay, and more difficulty in weaning off ventilatory support during an exacerbation if it has been needed are all signs that the illness is reaching end stage.

Renal

Renal disease differs from other chronic diseases in that there is a specific measure of disease severity, the glomerular filtration rate. Chronic kidney disease stage 5 is defined as a glomerular filtration rate <15 mmol/litre and is the stage at which renal replacement therapy is usually commenced. Some patients choose not to be

dialysed, or are advised that this is not an appropriate option for them. Some patients on dialysis also have a poor prognosis because of comorbidities, especially cardiac disease (Murtagh et al, 2007). A retrospective analysis of patients with stage 5 kidney disease managed without dialysis showed a 2-year survival of 47% (Murtagh et al, 2007).

Dementia

A palliative care approach is important to institute early on in the course of dementia rather than waiting until advanced disease. Patients may wish to discuss their future care and priorities while they have the capacity to take part in these discussions. In the USA, clinical indicators that a dementia patient may be eligible for hospice care (an estimated prognosis of less than 6 months) are when a person is no longer able to walk, has lost meaningful conversation and is dependent for most activities of daily living – especially when this is combined with other features such as weight loss of 10% or more, recurrent infections and pressure ulcers (Hughes et al, 2007).

Chronic neurodegenerative diseases

The concept of progressive milestones can be applied to these distressing diseases. The development of bulbar palsies and weight loss are poor prognostic signs in motor neurone disease. In addition, ventilatory failure, as a result of wasting and paresis of ventilatory musculature, with or without aspiration resulting from dysphagia, is often a terminal event. As speech and cognition can be affected, early recognition of and planning for advanced disease is encouraged to enable the patient to be able to take part in crucial discussions regarding feeding tube placements or ventilatory support while he/she retains mental capacity (Oliver et al, 2010).

Parkinson's disease is common and incurable, leading to an inexorable end stage. Again early recognition and discussion of preferences is useful. The National Institute for Health and Clinical Excellence guidance describes a palliative phase of Parkinsons' disease characterized by inability to tolerate adequate dopaminergic therapy, unsuitability for surgery and the presence of advanced comorbidity (National Collaborating Centre for Chronic Conditions, 2006).

Multiple sclerosis has a highly variable disease course. However, whether the disease begins with a relapsing or progressive course, in most cases the disease progression will result in progressive disability. This may occur at diagnosis or take many decades. Marked debility may be present for a prolonged period of many years (Oliver et al, 2010). Indications of deterioration and the need for inclusion on a palliative care register include dysphagia leading to recurrent aspiration pneumonias and recurrent admissions with sepsis and poor nutritional status, or communication difficulties or cognitive impairment, notably the onset of dementia (Free et al, 2006).

Examples of successful recognition of advanced disease

An integrated cardiology, primary care and palliative care service has resulted in improved recognition of advanced heart failure, especially by heart failure nurse specialists. It has improved communication about end of life issues and advance care planning and reduced the number of hospital deaths (Johnson et al, 2009). Other collaborations have also been successful. The British Heart Foundation and Marie Curie Cancer Care have worked together on a project called 'Better Together' where heart failure nurses and Marie Curie nurses visit patients together and a pilot evaluation of that service showed that 79% of patients who took place in the pilot were supported in their wish to die in their own home. The National Council for Palliative Care are focussing on the needs of patients with a diagnosis other than cancer, for example through their dementia project, long-term neurological conditions, renal and heart disease, and chronic obstructive pulmonary disease (Delamothe et al, 2010).

Why is it important for hospital specialists?

Health-care professionals are not always clear as to who should initiate end of life care conversations and whether these should occur in the community with GPs or with hospital specialists. In practice this depends on individual patients and circumstances. Although discussions with acutely unwell patients are not recommended, some may wish to discuss their disease while in hospital but not when more stable (Barclay et al, 2011). All doctors should be able to recognize when the disease is more advanced and initiate the process of appropriate and gentle conversations. This requires excellent communication, not only with the patient, but also between colleagues in primary and secondary care. Fragmentation of care is often a barrier to palliative care (Barnes et al, 2006).

Hospital specialists should be aware of community initiatives to improve access to palliative care for all patients. For example, in the UK GPs are encouraged by the Quality and Outcomes Framework to keep a register of all patients who are perceived to be in the last months of life. The Gold Standards Framework, from which the clinical indicators outlined in *Figure 1* are adapted, incorporates a palliative care register along with other stages such as regular primary care meetings aimed to improve palliative care for all, regardless of diagnosis (Free et al, 2006). However, the proportion of potential patients on these registers remains small, and those with non-malignant disease are even more scarcely represented (Onac et al, 2010). It would therefore be helpful if hospital specialists could communicate with GPs if they feel that the patient should be on the register which would act as an important prompt to GPs.

Conclusions

Despite the many advances in management of these chronic diseases it is inevitable that patients will deteriorate and die. There is a challenge to be as adept at recognizing and acting on this transition as in diagnosing and managing the initial presentation, which is increasingly recognized by clinicians. This is exemplified by readers of the *British Medical Journal* voting for palliative care beyond cancer as the topic they wanted to know more about. So perhaps we should be as blunt as the editorial introducing those series of articles: 'We're all going to die. Deal with it' (Delamothe et al, 2010). **BJHM**

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KEY POINTS

- Recognition of advanced disease is a difficult but vital skill.
- Patient and their families often wish to discuss that their disease is more advanced but these conversations rarely take place.
- Clinical indicators of advanced disease are available.
- Triggers along the disease trajectory, such as admission to hospital, should prompt a full assessment, including the need for a palliative approach.
- Communication with the patient, his/her family and the wider health-care team is of critical importance.