End of life prognostic indicators in patients with COPD

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Background

In the UK, chronic respiratory diseases cause 13% of adult disability, of which chronic obstructive pulmonary disease (COPD) is the major cause. Rankings for the main causes of mortality suggest that by 2020 COPD will be the third highest cause of mortality, and cancer of the trachea, bronchus and lung the fifth. Whereas the primary and palliative care needs of patients with lung cancer have been well documented, less is known about the needs of patients with chronic lung diseases at the end of life (Boland 2013). Indeed, it is acknowledged that *"much still remains unknown regarding assessment, management and prognostication in individual chronic non-malignant lung diseases"* (Boland 2013, pg 4).

This study explored the literature relating to end of life prognostic indicators for patients with COPD. In recent years there has been a growing awareness of the needs of patients dying from chronic diseases other than cancer, and it has been suggested that patients dying from non-malignant diseases experience a similar degree of symptom distress to cancer patients (Addington-Hall, 1998, Edmonds 2001, Boland 2013). Furthermore, patients with COPD report a symptom burden similar in magnitude to terminal cancer patients yet service provision and access to appropriate care has been reported as poor (Buxton et al 2010). It has also been shown that COPD patients are less likely to access primary and palliative care services at the end of life (Buxton et al 2010, Elkington et al 2004). According Gore et al (2000) and Elkington et al (2005) one reason for this is the poor provision of information about available services and the end-of-life options available to COPD sufferers.

Aims

An exploration of the available literature will inform our understanding of end-of-life prognostic indicators associated with COPD. This is the start a programme of research, with the ultimate aim of developing a prognostic index system that will allow clinicians to predict the end-of-life stage for COPD sufferers allowing them access to end-of-life services in primary care. The ability to predict this stage of COPD will enable service development to meet the needs of COPD patients as currently palliative care for this group of patients is limited (Partridge et al 2009).

Findings

The prognostic factors detailed in *table 1* each have a value in predicting the palliative stage of COPD. 6 minute walking test (6MWT) appears to the most significant with distances and mortality being inversely proportional (Pinto-Plata et al, 2004, Cote et al, 2007, Takigawa et al, 2007, Glope et al, 2013, Glope et al, 2014). The oxygen saturation baseline and the degree of desaturation during the 6MWT also appears significant (Casanova et al, 2008, Glope et al, 2014). The use of multidimensional staging systems such as BODE index is currently in use which offers a risk score for multiple physiological variables. The studies reviewed demonstrated these indexes to be reliable in predicting symptom burden and disease progression, but some modifications to bode has demonstrated benefits to accurate mortality prediction. COPD patients come into frequent contact with the acute care sector due to exacerbations (AECOPD) and these also have a value in predicting disease progression and mortality. *Graph 1* summarises the pattern of admissions over time, indicating that admissions are frequent following diagnosis, but reduce possibly as the patient learns to manage their disease. However the number of admissions increases steadily as the disease progresses and they approach the terminal stages of COPD (Andersson et al, 2006, Kinnuen et al, 2007).

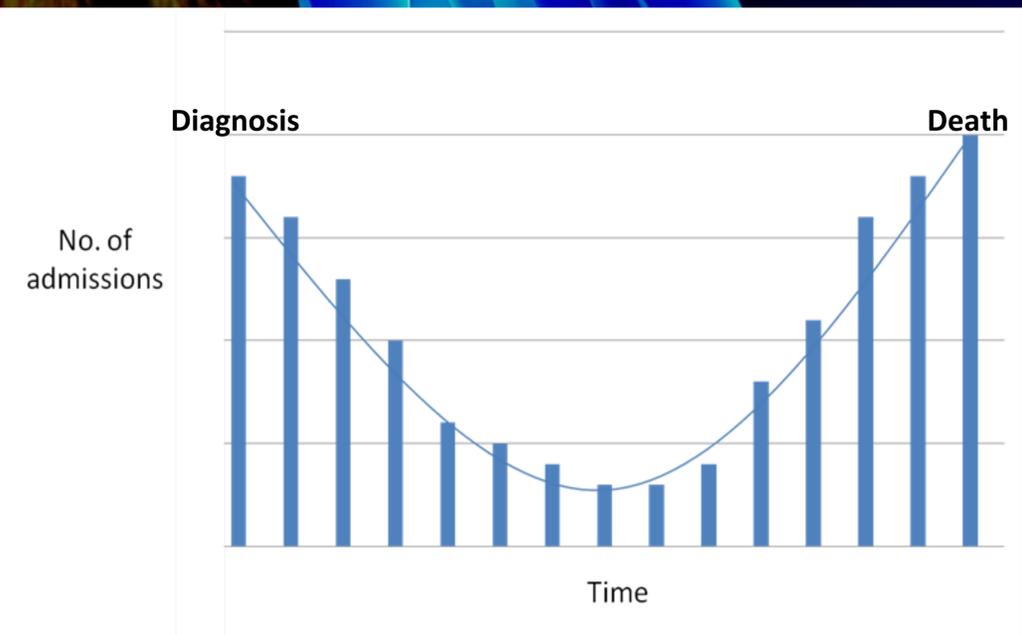| Prognostic indicators for patients with COPD |
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| 6 minute walking test |
| Dyspnoea scoring and multidimensional staging systems (e.g. BODE) |
| Biomarkers |
| Exacerbation frequency and duration |
| Co-morbidities |
| BMI and obesity |
| Depression and anxiety |

Table 1

Graph 1

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