

Chronic obstructive pulmonary disease

– issues in primary care

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Chronic obstructive pulmonary disease (COPD) presents major challenges to primary care in terms of workload, diagnosis, routine and exacerbation management and palliative care, but most importantly in terms of organising and structuring provision of care.

COPD is the cause of more mortality and morbidity in adults in the developed world than any other disease involving airflow limitation.¹ It is estimated by the World Health Organization to be the fourth leading cause of death worldwide, with 2.74 million deaths in 2000, and likely to become the third highest cause within the next few years due to persistent smoking and an ageing population.² UK costs for 1996/97 showed that the NHS spent more than £818 million on COPD (about US\$1,393 billion) or £1,154 (about US\$1,900) per person per year with the disease.³ From a health services perspective COPD accounts for as many as one in eight medical admissions¹ and many of these are emergency admissions which have risen dramatically in recent years, contributing significantly to hospital bed crises. These are associated with times of reduced primary care support, influenza and respiratory syncytial virus infection.^{4,5,6} At the most severe end, for patients with terminal COPD, it has been shown that the impact of the disease is often worse

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than lung cancer and that poorer care is provided.⁷

It has been estimated that between one and two per cent of our patients in primary care will have COPD, although this is likely to be higher in the more socioeconomically deprived areas; indeed, the differential effect between higher and lower social groups is perhaps greater for COPD than any other disease.⁵ The number

of undiagnosed patients with COPD is not absolutely clear, but has been estimated as 86% of cases in the USA.⁸ The two major reasons for under diagnosis appear to be due to lack of patient presentation other than for respiratory infections and misdiagnosis on our part. COPD is under diagnosed partly because many patients do not consult their general practitioner or do not reveal all their symptoms unless specifically asked and many regard their symptoms as age or fitness-related and thus do not seek treatment.⁹ Sur-

prisingly, people who are undiagnosed do not necessarily have less severe symptoms than those with a diagnosis.⁹

So how can we reduce the under and misdiagnosis of COPD? The two most important risk factors for COPD are a history of cigarette smoking and increasing age. With the advent of small, portable, relatively cheap spirometers, an accurate diagnosis can be made from the finding of a reduced FEV₁ and FEV₁/FVC ratio with a lack of significant reversibility. However spirometers are not yet available to all working in primary care and their use does require adequate training in undertaking and interpretation. Whilst guidelines often recommend screening all at risk patients, i.e. smokers over 40, this has major logistic limitations. Work undertaken in the Netherlands suggests that focusing on those smokers who also present with breathlessness, persistent cough and/or sputum production, may increase the likelihood of detecting COPD.¹⁰ Work done in the UK suggests that we need to focus on

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two key groups of smokers over the age of 40: those who are currently treated for asthma and those currently untreated but who are either breathless on exertion or have chronic cough or wheeze.¹¹ Further research is being undertaken under the auspices of the International Primary Care Respiratory Group to more clearly define a screening questionnaire for smokers over 40.

Another key element that appears to contribute to lack of diagnosis is patients' perceptions that we can offer them little in terms of treatment.⁸ Thus it is important that we are regarded as positive in terms of therapeutic interventions to improve quality of life and reduce exacerbations.

A potential advantage of early diagnosis is that patients may be persuaded to stop smoking through linking smoking to their lung function, symptoms and lifestyle limitation. This emphasises that the main preventable risk factor for COPD is cigarette smoking and the general practitioner and other primary care professionals should grab every opportunity to encourage smokers to quit. One study found that the FEV₁ of patients that had continued to smoke, declined by

more than twice as much per year as those that had stopped smoking.¹² It is claimed that GP advice alone is highly cost-effective – but it is relatively ineffective¹³ and studies in which

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it has been included as part of larger health promotion programmes have failed to replicate the benefit seen in specific trials.¹⁴ The best chance that a smoker can be given to quit is to have access to a dedicated smoking cessation service which provides pharmacological and psychological support.¹⁵ Whilst possible to provide in every primary care centre it may be, logistically and for resource reasons, more rational to provide services on a larger population basis.

Table 1. Evidence-based examples for approaches to local coordinated care*

- Primary care based health care professionals with specialist training in respiratory disease, chronic obstructive pulmonary disease treatment, spirometry, and smoking cessation
- Use of screening questionnaires or posters to identify those most likely to have COPD from amongst those who smoke and older patients with an asthma diagnosis
- Increased level of smoking cessation services
- Spirometry available for screening and diagnosis in primary care of those at risk (smokers with respiratory symptoms, those with asthma aged over 40)
- Registry of patients
- Pulmonary rehabilitation services in primary and secondary care
- Use of self-management programmes for those with recurrent exacerbations
- Hospital at home and integrated care between primary and secondary care for managing non-life threatening moderate to severe exacerbations
- Palliative care services for terminal disease
- Packages of home support including regular home nursing care and social services for severe disease

* Adapted from *Bridging the Gap*²²

Whilst therapeutic nihilism has been associated with COPD this should now be far from the case as much can be done to improve symptoms, lifestyle limitations and prevent exacerbations. The most effective non-pharmacological intervention is that of pulmonary rehabilitation with programmes of physical training and disease education showing improvements in exercise per-

formance and health status, prolonging independence and reducing health care costs. Currently, the duration of benefit from rehabilitation appears to be between eighteen months to

three years before the improved health status or exercise capacity returns to baseline but it must be remembered that in this period, a patient who has not received rehabilitation may have declined more significantly.^{16,17} What is of particular interest is the increased recognition of the benefits of pulmonary rehabilitation in milder patients and the ability to deliver the service in primary care.¹⁸ Other important non-pharmacological treatment may be

weight loss in some obese patients and reviewing nutritional status in those with more severe disease.

Routine pharmacological intervention was previously limited to short-acting bronchodilators taken as required and regular oxygen for severe disease and encouraged a feeling that nothing made much difference to patients with COPD. We now have substantial evidence of benefit from long-acting beta agonists (formoterol and salmeterol) and more recently of the once daily antimuscarinic tiotropium. The benefits in terms of symptom improvements, quality of life improvements and exacerbation protection are being increasingly recognised. In patients with severe disease, especially those with frequent exacerbations, inhaled steroids appear to provide benefit particularly in terms of exacerbation protection. Oxygen has been shown to reduce mortality but should be reserved for those with severe disease who have had a formal hospital-based assessment. Other therapeutic interventions that have substantial evidence base are influenza vaccination and to a lesser extent pneumococcal vaccination.

Whilst self management has been shown to improve outcomes in

asthma it has not been studied in COPD until recently. A recently published study has shown, in hospital care patients, that a programme of education and a personal action plan including antibiotics and oral steroids, used appropriately early in exacerbations, substantially reduced unscheduled health care and hospitalisations.¹⁹ Whilst this has not yet been repeated in a primary care setting it is hoped that this would be of similar benefit. In patients who would previously have been hospitalised there is now substantial evidence to support triage for admission, home-based therapy for acute exacerbations and early discharge

schemes, which have all been shown to reduce time spent in hospital and the number of hospital admissions. To be successful, patients require support at home in the form of an appropriate treatment package and regular visits from a nurse.²⁰ Resource saved by decreasing hospital admissions could be directed towards increasing the number of nurses and nursing time available for home-based care and improving palliative care for those with terminal disease.

A coordinated approach is thus needed to ensure that COPD is diagnosed correctly and that care is structured. All of these interventions require active monitoring utilising dis-

ease registers and routine proactive service provision using a recall system.²¹ There are many, good, evidence-based examples for approaches to local coordinated care (see Table 1).²²

In conclusion, there is a lack of awareness of COPD. It is under-diagnosed, confused with other conditions and poorly understood. Resources could be allocated more appropriately in healthcare systems to address the issues of diagnosis and comprehensive care packages, including rehabilitation and holistic lifestyle changes. These measures should result in improved earlier diagnosis, improved quality of life and fewer patients needing emergency care.

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