Using individualised cognitive behavioural therapy as a treatment for people with COPD

This research study investigated whether individualised CBT was an effective intervention for patients with COPD to improve psychosocial impairment.

Method We studied the effects of a respiratory nurse-led cognitive behavioural therapy programme in 10 patients with COPD, assessing goal achievement, Hospital Anxiety and Depression Scale scores and medical admission rates.

Results We used CBT in 10 patients with COPD across a range of severities. All 10 patients completed the CBT programme, with an average of four sessions (range 2–13). The mean score in the anxiety domain fell from 10.6 (range 6–15) before CBT to 3.8 after the intervention (range 1–7; p<0.001). Similar improvements were seen in the depression domain, with a mean score before CBT of 10.9 (range 2–17), falling to a mean score after treatment of 5.2 (range 3–12; p<0.001). A statistically significant reduction in the number of admissions was seen, with a mean of 1.1 admissions (total 11) before CBT to a mean of 0.2 admissions (total 2), p=0.02.

Conclusion In this non-randomised study, a programme of individualised CBT in patients with COPD resulted in marked improvements in psychosocial impairment and a significant reduction in service use.

INTRODUCTION

COPD is becoming an increasingly common condition. It is a major cause of long-term chronic ill health and a major source of healthcare expenditure (Barnes, 2007; Murray and Lopez, 1997).

Breathlessness is its most distressing symptom and this is multifactorial with interrelated physiological, psychological and sociological components. Fear and frustration are very common and lead to inappropriate avoidance of activities (including participation in pulmonary rehabilitation). These emotions also lead to safety-seeking behaviours (for example inappropriate presentation to emergency services).

The high prevalence of psychological complications is increasingly being recognised in patients with COPD (Kunik et al, 2005; Yohannes, 2005; Dahlen and Janson, 2002). NICE (2004a) guidelines estimated the prevalence of depression at 40% in patients with COPD. Kvaal et al (2001) found that patients with COPD tended to score higher for anxiety when screened, compared with other older hospitalised patients.

Patients’ functioning is adversely affected by anxiety and depression, even after controlling for the effects of dyspnoea (Weaver et al, 1997). Depression may affect length of hospital stay for COPD exacerbations and is associated with higher post-discharge mortality rates (Ng et al, 2007). Anxiety is a significant predictor of the frequency of hospital admissions with acute exacerbations of COPD (Gudmundsson et al, 2005; Yohannes et al, 2000).

Although COPD guidelines acknowledge altered mood states as important associates of COPD (Rabe et al, 2007), they do not offer specific guidance on how to measure, monitor or treat these components. Anxiolytic and antidepressant pharmacotherapy can be used, although its effectiveness is limited and side-effects are common (Kunik et al, 2001).

Pulmonary rehabilitation programmes often include psychotherapeutic strategies and can increase physical activity and improve coping with anxiety (Sassi-Dambron et al, 1995). Unfortunately, more severe anxiety and depression can limit the uptake of this useful intervention as patients often decline treatment.

Cognitive behavioural therapy (CBT) is an established psychological approach that is now recommended as first-line treatment for depression and mild to moderate anxiety in the UK (NICE, 2004b; 2004c). It is an empirical therapy that focuses on problems and their solution, encourages
self-management and specifically addresses misconceptions, unhelpful beliefs and maladaptive patterns of behaviour.

The last are common in patients with COPD. They include beliefs that mild breathlessness on exertion is harmful and that supplemental oxygen is needed for breathlessness even when oxygen saturations are normal, as well as the overuse of inhalers and emergency admission to hospital because of an inappropriate fear of dying when breathless.

At the time of introducing CBT to our clinical COPD service, there was limited data about its effectiveness, mainly from small studies using a range of treatment sessions (Kunik et al, 2001; Eiser et al, 1997; Lisansky and Clough, 1996).

Kunik et al (2001) found a single two-hour group session of CBT reduced anxiety and depression in 56 patients, but there was no observed change in physical functioning. A six-session course of CBT produced a sustained improvement in exercise tolerance in 10 patients with severe COPD but this was not associated with changes in anxiety or depression (Eiser et al, 1997). De Godoy and de Godoy’s (2003) randomised trial demonstrated significantly reduced anxiety and depression with a psychotherapy programme that included a large CBT component.

AIM
We wanted to investigate the effects of individualised CBT delivered in a respiratory outpatient setting to patients across a range of COPD severity by a respiratory nurse specialist with appropriate expertise. We describe our treatment approach and present the outcomes in 10 patients.

METHOD
Patient selection
Patients were identified from a hospital outpatient clinic. Referral was made by the treating doctor if anxiety or depression was felt to be significantly affecting symptoms. Previous treatment with antidepressant drugs was neither an entry requirement nor an exclusion criterion.

Lung function testing
Forced expiratory volume in one second (FEV1) was recorded and expressed as a percentage of the predicted value (European Coal and Steel normal values). Patients were classified by severity of their condition according to GOLD (Global Initiative for Chronic Obstructive Lung Disease) criteria (Rabe et al, 2007).

Psychology assessment
Hospital Anxiety and Depression Scale (HADS) questionnaires were administered in the standard UK format before and 2–4 weeks after treatment (Zigmond and Snaith, 1983). Scores were determined separately for anxiety (HADS-A) and depression (HADS-D).

A score under 8 is generally considered to be normal, 8–10 borderline, and scores from 10–21 indicate clinically significant symptoms.

CBT
CBT was delivered in the outpatient clinic by a respiratory nurse consultant (Karen Heslop) with postgraduate diploma level CBT training and significant experience in COPD management. A consultant clinical psychologist (Christine Baker) provided clinical supervision.

Lifestyle expectations and limitations were explored in an initial assessment session. The interaction between anxiety and physical symptoms was discussed and techniques to change the counterproductive anxiety cycle were explained and practised. These included distraction, breathing control and relaxation.

Distraction techniques aim to reduce somatic attention (inappropriate monitoring by the patient of breathing and other somatic symptoms) and help address hyperventilation.

An advice leaflet about COPD was supplied. Patients were asked to set two or three achievable, realistic goals, for example doing small amounts of housework, gardening, going out alone, using public transport or practising techniques discussed. In particular, enjoyable activities were scheduled in order to boost mood and motivation. Patients were reminded to pace activities and avoid rushing. These goals were incorporated into their daily routine or, if necessary, were broken down into small, manageable steps.

Follow-up appointments were usually made for two weeks after the initial assessment. Progress was reviewed and treatment strategies were reinforced. Follow-up continued until both the patient and therapist felt that satisfactory progress had been achieved. This was continually assessed by means of goal achievement targets.

The protocol for the individualised CBT used is described in Table 1.

<table>
<thead>
<tr>
<th>TABLE 1. COGNITIVE BEHAVIOURAL THERAPY PROTOCOL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment of problem – one recent example of the patient’s experience noted. Triggers, physical symptoms, associated thoughts and predictions, emotional responses and behaviours recorded</strong></td>
</tr>
<tr>
<td><strong>Addressing and changing unhelpful misconceptions</strong></td>
</tr>
<tr>
<td><strong>Information about the counterproductive anxiety cycle</strong></td>
</tr>
<tr>
<td><strong>Addressing somatic attention</strong></td>
</tr>
<tr>
<td><strong>Addressing hyperventilation</strong></td>
</tr>
<tr>
<td><strong>Identifying and addressing maladaptive beliefs and catastrophic predictions</strong></td>
</tr>
<tr>
<td><strong>Re-engagement with everyday activity using goal-setting and activity scheduling</strong></td>
</tr>
<tr>
<td><strong>Planning and pacing activities</strong></td>
</tr>
<tr>
<td><strong>Activity scheduling</strong></td>
</tr>
<tr>
<td><strong>Providing information where required</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE 2. PATIENT DEMOGRAPHICS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>
Hospital admission rates
Hospital admissions for the six-month periods before and after CBT were identified from case notes, electronic admission recording systems and GP records. The admission rates for the two periods were compared.

RESULTS
Patient demographics are outlined in Table 2, p15. The average age was 68 years (range 57–80). Half were male. All were receiving regular treatment with short and long-acting beta2 agonists, inhaled corticosteroids and/or long-acting anticholinergic bronchodilators. One patient had mild COPD (FEV1 >59% of predicted) and the others had moderate or severe disease (FEV1 <60% of predicted).

Two patients had been prescribed antidepressants and remained on treatment. The burden of anxiety and depression was high. The mean HADS anxiety score before CBT was 10.6 (range 6–15) and four patients had scores in the clinically significant range (>11). The mean score fell to 3.8 (range 1–7) after intervention (p<0.001) (Fig 1).

Similar improvements were seen in the depression domain, with a mean HADS score of 10.9 (range 2–17) before CBT and 5.2 (range 3–12) afterwards (p<0.001, Fig 2). None of the patients withdrew from the CBT programme. They were seen on average for four sessions (range 2–13).

Patients had a mean of 0.2 admissions in the six months after CBT, compared with 1.1 in the six months beforehand (p=0.02, Fig 3).

DISCUSSION
Until recently, COPD treatment has focused on pharmacological strategies and pulmonary rehabilitation, and little attention has been paid to managing the psychological consequences of the disease. This probably reflects the relative lack of effectiveness of conventional pharmacological therapies for anxiety and depression caused by physical disease.

Pulmonary rehabilitation has been shown to reduce anxiety and depression in patients with COPD (Paz-Diaz et al, 2007) as well as improving mobility. This indicates that the condition’s psychological components are amenable to treatment.

CBT is now recognised as a powerful tool for managing psychological illness, including that associated with physical disease, although to date there has been little evaluation of its efficacy in COPD.

Previous studies have shown conflicting results, with variable effects on anxiety, depression and mobility (De Godoy and de Godoy, 2003; Kunik et al, 2001; Eiser et al, 1997). A recent US trial in patients with COPD in acute care with moderate anxiety or depression scores demonstrated that eight group sessions achieved sustainable improvements in quality of life but did not influence healthcare use (Kunik et al, 2008).

Our patients responded well to a relatively brief directed intervention that typically comprised four sessions. We observed changes in anxiety and depression scores of a magnitude that were likely to have been clinically significant.

All patients achieved their goals of improved breathing control and increased activity and three who previously refused to enter pulmonary rehabilitation were able to participate in a local programme. We regard this as an important outcome because of the clear benefits of pulmonary rehabilitation in patients with COPD.

In contrast to previous studies, we also found a statistically significant fall in the total number of hospital admissions, suggesting that CBT does not only reduce anxiety and depression but also improves
physical functioning (Kunik et al, 2001; Eiser et al, 1997). The study was not blinded so this can only be considered to be preliminary data.

The effect of CBT in our cohort was seen with a substantially smaller number of treatment sessions than would be generally recommended for isolated anxiety or depression (NICE, 2004b; 2004c). The NICE guidance is based on studies of patients with primary psychiatric problems and these might be less amenable to treatment than anxiety and depression that are secondary to physical illness. This suggests it may be easier to treat psychosocial difficulties in patients with COPD.

Our programme was devised by adapting conventional cognitive behavioural approaches to deal with issues specific to COPD, such as breathlessness attacks and how to pace activities to avoid these.

Further evaluation of the components and structure of CBT programmes for patients with COPD is needed.

However, we believe that the delivery of the CBT by a respiratory nurse specialist was the most important contributor to the success of our programme. Dual training allowed the therapist to distinguish psychological from physical symptoms, offer reassurance about the latter, and deliver education and CBT in parallel.

There is considerable overlap between the symptoms of physical disease and psychological distress in patients with COPD, and dual training is important in distinguishing them and directing treatment appropriately.

CBT training of respiratory nurses also allows proper integration of psychological therapies with normal outpatient care, which is important for a group of patients with limited mobility who often find attending clinics difficult.

Patients can undergo therapy in clinic settings with which they are familiar and can avoid the stigma that is sometimes associated with attending a psychologist or psychiatrist which can act as a barrier to a potentially beneficial approach.

Our study therefore highlights the potential value of offering CBT training to specialist nurses from a non-psychology/psychiatry background working in long-term condition management.

We did not undertake any cost-effectiveness analysis but, given the reduction in hospital admissions, CBT is likely to have been cost-effective for our group of patients.

Reduced admissions were not seen in the only previous randomised study but that might have reflected design effects as the control arm included an education programme that reduced anxiety.

Alternatively, there were differences compared with our study in the patient population, selection criteria, disease severity and the group nature of the therapy (Kunik et al, 2008).

CONCLUSION

We believe that CBT delivered by a respiratory nurse specialist is likely to be an effective therapy generally for patients with COPD. However, further evaluation of the therapy with a randomised controlled trial is needed before there is a sufficient evidence base for it to be incorporated into routine clinical practice.

For further information on CBT training, see www.therapy-in-practice.co.uk.

REFERENCES


