

HOME OXYGEN ASSESSMENT IN BLAENAU GWENT

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Introduction

Supplemental oxygen therapy is the only existing approach shown to modify the long-term decline in lung function associated with COPD. LTOT is associated with a variety of other benefits in patients with severe COPD including increased survival, reduced secondary polycythemia, increased cardiac function during rest and exercise and improved exercise tolerance.^{1,2}

Up until the first of February 2006 in England and Wales home oxygen could only be prescribed by primary care physicians. Unfortunately a lot of patients were prescribed oxygen for relief of symptoms of breathlessness without ever having had a formal oxygen assessment. Much of this oxygen was given in the form of cylinders for PRN usage (short burst oxygen therapy – SBOT) without good evidence of efficacy of this treatment.

The implementation of the new oxygen contract has highlighted that appropriate assessment is essential so that patients are treated with home oxygen for the right period of time and with appropriate flow rates to obtain optimal benefits and reduce chances of adverse events.

An attempt to rationalise oxygen prescribing by reviewing all patients receiving oxygen in Blaenau-Gwent (BG), a Local Health Board serving a population of 71000, is the basis of this report.

METHODS

A comprehensive list of all patients who were receiving oxygen was obtained from Contractor Pharmacy Wales/ Business services Mamhilad. A total of 340 patients were identified. Through liaison with GPs in BG and supplying pharmacies the list was refined to current users, leaving 304 patients.

205 patients on the list were registered at Nevill Hall Hospital, the main hospital serving BG. The case notes of these patients were reviewed to identify those patients known to the Chest Clinic and under regular review. These patients were simply asked to fill in a consent form and a Home Oxygen Order Form (H.O.O.F.) was completed. From the patients remaining, high users i.e. those using at least eight oxygen cylinders per week, were identified. GPs were asked to refer these patients to the respiratory clinic urgently for a full medical review and oxygen assessment.

All other patients were initially assessed by a respiratory specialist nurse. At the nurse led clinic a proforma was completed. Patients also had spirometry, oxygen saturations using a pulse oximeter and ear lobe blood gases (using the iSTAT blood gas analyser) performed on room air. Patients were advised with regard to smoking cessation and their medication was reviewed. Patients who were identified as meeting the criteria for LTOT were commenced on this. Those with borderline blood gases were reassessed at 3 weeks. Complex cases were referred on for medical review.

All assessments were completed by February 1st 2006, the start date for the new contract.

RESULTS

Number of patients established on oxygen and under regular follow up	65
Number of patients assessed	239
Number of patients who discontinued oxygen after assessment	92
Number of patients who had discontinued oxygen themselves	25
Total numbers who discontinued oxygen	117
Breakdown of patients remaining on oxygen	
Number of patients changed to concentrators only	46
Number of patients changed to concentrators and ambulatory	42
Number of patients changed to portable oxygen	1
Number of patients remaining on short burst oxygen	33
Total number of patients remaining on oxygen	122

Prior to assessment the following number of cylinders were supplied month:

Cylinder size	Cost per unit	Delivery Charge	Headset Rental Charge	Total Cost
460 x 116	£18.32	£20	£2.50	£2367.56
1360 x 617	£8.09	£20	£2.50	£9437.03
340 x 4	£11.44	£20	£2.50	£67.36
300 x 5	£11.94	£20	£2.50	£86.10
TOTAL COST - £11958.05				
ANNUAL COST- £143496.60				

Current costs following assessment:

	Monthly cost	Annual cost
No. on concentrators post assessment - 46	£1930.85	£23170.20
No. on concentrators plus ambulatory- 42	£3423.70	£41084.40
No. on ambulatory only - 1	£89.12	£1069.45
No. on short burst oxygen - 33	£41.24	£15060.00
Total Annual Costs £80380.05		
Total cost saving per annum- £63116.55		

DISCUSSION

LTOT for hypoxemic COPD was firmly established as an effective treatment 25 years ago by two definitive trials which showed a survival benefit^{1,2} Such treatment was greatly facilitated by development of the oxygen concentrator.

In November 1985 the prescription of home oxygen via concentrators became available. February 2006 saw new arrangements: all forms of home oxygen would be provided by a single supplier in each region of England and Wales after receipt of a home oxygen order form (HOOFF) specifying the details of usage, such as flow rates and expected hours of usage. Ambulatory oxygen - including that supplied as liquid - would be generally available for the first time. Importantly, specialists based in hospitals will be able to order home oxygen directly. It was envisaged that in the future respiratory and paediatric teams will probably become the main prescribers of LTOT.

England and Wales rank 4th with respect to per capita LTOT behind France, Canada and the USA .

Previous papers have highlighted the discrepancies in domiciliary home oxygen services and potential for more efficient resource allocation.^{3,4}

Following appropriate assessment 117/239 (48.9%) of our patients had home oxygen discontinued completely. The majority of these patients were prescribed home oxygen for relief of dyspnoea associated with heart failure or angina suggesting a lack of understanding in primary care

of the indications for this expensive therapy; the concomitant economic burden as a result was not insubstantial.

We demonstrated that by performing assessments and discontinuing oxygen in some patients considerable financial savings could be made. If replicated nationally, this could provide much needed resource for respiratory departments to enable assessments to be done. At such a visit a full review of the patients condition and therapy can be undertaken and treatment optimised.

Only 65/304 (21.3%) of the patients were under regular follow-up at a respiratory clinic. Most patients had been prescribed oxygen in primary care with no assessment of oxygen levels. Most of the oxygen given was in the form of cylinders for short burst oxygen therapy (SBOT).

A recent evidence based review of SBOT in COPD suggested that the widespread prescribing of SBOT is not evidence based⁵. Moreover patients prefer concentrators as they are more acceptable, more useful and less obtrusive.⁶ Financial imperatives and patient preference seem to indicate concentrators as the mode of administration of choice where appropriate.

33 patients remained on SBOT highlighting the contentious and vexed nature of this form of oxygen provision and underscoring the need for a scientific rationale for SBOT to be established.⁷

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