

Portable oxygen therapy: use and benefit in hypoxaemic COPD patients on long-term oxygen therapy

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ABSTRACT: In 159 chronic obstructive pulmonary disease (COPD) patients (139 males, mean age 62 ± 8 yrs, arterial oxygen tension (PaO_2) 7.2 ± 0.9 kPa), on long-term oxygen therapy (LTOT), we evaluated the effects of portable oxygen therapy both on the daily duration of oxygen therapy and on daily activities. They were given two types of LTOT at random: group A ($n=75$), oxygen concentrators only (OC); group B ($n=84$), either small oxygen cylinders plus OC ($B1=51$) or liquid oxygen ($B2=33$). The patients were followed-up for one year by means of: a) medical examination every three months; b) monthly home interviews concerning the daily duration of oxygen therapy, the utilization of the devices and the daily activities of the patients; c) a measurement of the daily oxygen usage. The results show that: 1) there are no significant clinical and functional differences between groups A and B at the onset of and throughout the study; 2) in group B the daily use of oxygen therapy is significantly longer than in group A (17 ± 3.5 h-day⁻¹ vs 14 ± 3 h-day⁻¹, $p < 0.01$) without any difference between groups B1 and B2; 3) outdoor walking activities are different between groups A and B, at least in those patients using oxygen more than 18 h-day⁻¹. Only 60% of patients in group B (55% of B1; 67% of B2) use their portable devices outdoors and for walking. No strict predictive criterion of this use is found in our study. We believe that regular supervision is necessary during the first three months following the prescription of portable oxygen therapy to estimate its use and usefulness.

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The British MRC [1] and the North American NOTT [2] studies have shown that: a) long-term oxygen therapy (LTOT) improves the vital and functional prognosis of patients with hypoxaemic chronic obstructive pulmonary disease (COPD); b) improvement is proportional to the daily duration of oxygen therapy. The patients with 18 h oxygen therapy a day had an improved survival rate compared to those with 12 h a day [2].

Therefore, oxygen therapy must last as long as possible during the day. The usual use of fixed oxygen sources limits the patient's autonomy. Treatment compliance remains hazardous with gaseous oxygen [3] as well as with oxygen concentrators [4]. To improve the patient's comfort and treatment compliance, the addition of a portable oxygen source has been considered [5-7]. The development of such a technique is not without economic consequences, and its utility should be precisely analysed.

The aim of this study was to evaluate the contribution of portable oxygen in COPD patients with LTOT and the respective advantages of its gaseous or liquid

forms with regard to the daily duration of oxygen therapy, the patient's daily activities and the improvement brought about by oxygen therapy.

Patients and methods

This study was prospective and involved twelve centres. As proposed by the French Health Ministry, Antadir was given responsibility for the project. The study began on April 1, 1984 and lasted for two years. Patients were recruited for one year, and the follow-up lasted for one year.

Patients

Those patients included were aged 40-75 yrs, with severe COPD, defined by the following criteria: forced expiratory volume in one second/forced vital capacity (FEV_1/FVC) $< 60\%$, total lung capacity (TLC) $> 80\%$ of reference values [8], $\text{FEV}_1 < 1$ l, and with stable chronic respiratory insufficiency: arterial oxygen tension (PaO_2)

<8 kPa and >5.3 kPa; arterial carbon dioxide tension (PaCO_2) <8.2 kPa. They had not suffered from any episodes of respiratory decompensation for at least six weeks. Patients should already have LTOT by a fixed oxygen source. Only those able to walk more than 200 m with portable oxygen equipment during a 12 min walking test [9] with gasometrical supervision were retained for the survey.

Patients excluded already had portable oxygen, had been hospitalized more than three times in the previous year for respiratory failure, or had suffered left heart failure or an associated pathology influencing functional and/or vital prognosis.

Methods

Oxygen treatment for >15 h a day was prescribed for all patients included in the study. In each centre, the following groups were established by random selection: 1) a group with oxygen concentrators only, constituting the control group; 2) a group with, according to each centre, either oxygen concentrators plus gaseous oxygen in 0.4 m³ cylinders or liquid oxygen in the form of a stroller and liberator (Cryogenic Associates, Indianapolis, USA).

All patients used nasal prongs for connection. The flow rates used for oxygen were determined to maintain PaO_2 above 8 kPa at rest and during exercise (12 min walking test). The mean values were 1.7 ± 0.6 l·min⁻¹ at rest and 2.2 ± 0.7 l·min⁻¹ during exercise.

The follow-up combined medical examination with an initial check-up (T0) and then quarterly check-ups (T3, T6, T9, T12) and a home interview.

The initial check-up included a clinical examination with quantification of dyspnoea (Fletcher scale modified by Sadoul, in 5 degrees), evaluation of right heart function, a functional examination to include a walking test [9] with and without oxygen and a statement of hospital in-patient stay during the last three months.

Quarterly check-ups at T6 and at T12 were identical to the initial one. Check-ups at T3 and at T9 were simplified, with a clinical check-up, arterial blood gas measurements during rest breathing ambient air record and a follow-up of hospital stays.

For the home follow-up interviewers visited each patient's home every month. Besides obtaining socio-demographic data, they gathered three types of information: daily duration of oxygen therapy for each oxygen source; patient's activity and its location; patient's opinion about the oxygen therapy technique used.

Two questionnaires were used:

1) *Daily activities.* Split into half-hour units, this questionnaire allowed the exact compilation of the patient's daily activities, and the duration and mode of his oxygen therapy, called "declared duration". Since all these elements are very repetitive, a single questionnaire was filled out each month for one year. The patients answered by describing the day before the questionnaire

took place and all days of the week were taken into account. In this way, the weeks schedule could be re-created.

The data of this questionnaire were supplemented by an objective evaluation of the daily duration of oxygen therapy called "controlled duration" based on the hourly reading of the oxygen concentrators and the quantities of liquid or gaseous oxygen delivered, compared to the amount of time effectively spent at home.

Calculations were made over a year. Spontaneous liquid oxygen leaks, evaluated at about 20% by the devices constructor's and overestimated here to about 25%, were taken into account (evaporation, stroller refill, etc).

2) *Acceptability.* With open or coded questions, this questionnaire was given to patients with portable oxygen. The questions referred to the patient's opinion concerning the portable material used for LTOT, the simplicity of its use, the autonomy allowed and the quality of gas deliveries.

Results

One hundred and fifty-nine patients (139 men, 20 women; 84 former oxygen therapy patients and 75 new ones) were included between April 1, 1984, and April 1, 1985: 75 with fixed oxygen only; 84 with fixed and portable oxygen (51 with gaseous oxygen and 33 with liquid oxygen).

During the one-year study, 24 patients died (9 with fixed oxygen, 15 with portable oxygen) and 13 patients (8 with fixed oxygen, 5 with portable oxygen) were excluded because an associated pathology was discovered (n=5) or because of the patient's lack of co-operation (n=8).

Therefore, the number of medical check-ups and home questionnaires was 158 at 3 months, 136 at 6 months, 128 at 9 months and 122 at 12 months (58 with fixed oxygen, 64 with portable oxygen).

Medical Data

1) *Initial check-up.* Patients clinical and functional characteristics are listed in table 1. They show a severe obstructive pattern which was diagnosed in all patients and had been evolving for at least 10 yrs. The patients were markedly hypoxic (PaO_2 7.2 ± 0.9 kPa, range 6.0–7.9 kPa) and mild to moderately hypercapnic (PaCO_2 6.4 ± 1.1 kPa, range 5.6–7.3 kPa). No statistically significant difference appeared either between the two main groups, or between the subgroups with portable oxygen.

2) *Medical follow-up.* The clinical and functional parameters remained stable in the three groups for the year considered. Moreover, during successive check-ups, they remained equal, in their average value, to the values of the initial check-up.

Table 1. – Initial characteristics of the patients

n		Fixed O ₂ 75	Portable O ₂ 84	Gaseous O ₂ 51	Liquid O ₂ 33
Sex		63 m 12 f	76 m 8 f	45 m 6 f	31 m 2 f
Age	yrs	63±7.4	61±8.1	61±7.5	62±8.7
Dyspnoea	≥3	86%	93%	90%	88%
FVC	l	2.3±0.7	2.2±0.7	2.2±0.7	2.2±0.7
TLC	l	5.9±1.4	5.6±1.5	5.6±1.6	5.7±1.5
FEV ₁	l	0.8±0.4	0.8±0.3	0.8±0.3	0.8±0.4
FEV ₁ /FVC	%	35%	36%	36%	35%
PaO ₂	kPa				
rest		7.2±0.8	7.2±1	7.1±1.1	7.2±0.8
post-exercise		7±1.2	6.7±1.4	6.6±1.4	6.8±1.3
Haematocrit	%	47±5.4	46.3±4.7	46.1±5.6	46.4±1.2
Haemoglobin	gm·100 ml ⁻¹	15.3±1.7	15±1.7	14.9±2	15.2±1.9
Distance walked	m				
under air		407±204	423±205	337±130	546±22
under O ₂		485±214	478±219	370±140	628±22

Home questionnaire data

All patients were inactive, invalid or retired. The different groups of patients were similar with regard to their former professions, living conditions and initial daily activities.

1) *Daily duration of oxygen therapy.* The "declared duration" of daily oxygen therapy increased regularly during the first three months for all patients and stabilized thereafter. In the fixed oxygen group, it was generally less than the prescribed duration. In the portable oxygen group, it was always higher compared to the fixed oxygen group (17 ± 3.5 h·day⁻¹ vs 14 ± 3 h·day⁻¹; $p<0.01$). There was no difference between the gaseous portable oxygen and liquid portable oxygen subgroups (17.3 h·day⁻¹ vs 16.7 h·day⁻¹; NS).

Table 2. – Daily activities of patients, average values over the year of the study

n		Fixed oxygen 58		Portable oxygen 64
Indoors				
rest	h	13	NS	12.8
activities	h	9.2	NS	9.3
Outdoors				
activities	h	1.6	NS	1.8
distance walked	m	520±370		480±397

NS: not significant between fixed and portable oxygen.

The "controlled duration" confirmed the "declared duration" (fixed oxygen: 13.7 h·day⁻¹; portable oxygen 17.1 h·day⁻¹) and there was no difference according to the mode of portable oxygen.

The longest durations of oxygen therapy were observed in the portable oxygen group (fig. 1), and the

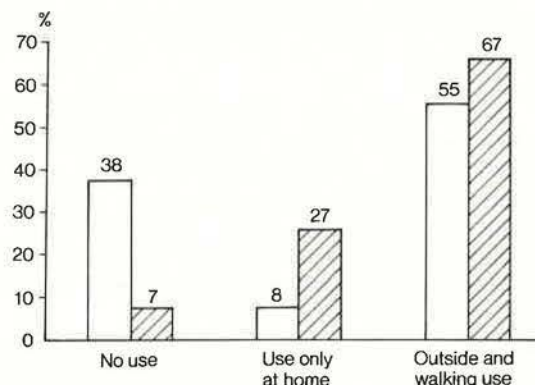


Fig. 1. – Daily duration of oxygen therapy. Percentage of patients according to the type of O₂ source.

□ fixed O₂, n=58; ▨ Portable O₂, n=64.

daily duration of oxygen therapy was maximal (18 ± 2 h·day⁻¹) for patients who really used their portable oxygen equipment outside their homes.

2) *Daily activities.* These were analysed month by month, and the amounts averaged over one year. In a first analysis, the time spent inside and the activities, as well as the time spent outside and the walks appeared identical for all groups (table 2). However, daily activities were different according to the daily duration of oxygen therapy (table 3), and the means of utilization of portable oxygen (fig. 2).

With a daily therapy less than 15 h·day⁻¹, the daily activities were similar in the patients with fixed oxygen and with portable oxygen. With durations longer than 18 h·day⁻¹, daily activities varied significantly between the two groups. In the portable oxygen group, patients carried out the same activities whether they took oxygen less than 15 h·day⁻¹ or more than 18 h·day⁻¹. In the fixed oxygen group, outings and walks were considerably less in those patients using

Table 3. — Daily activities of the patients according to the duration of oxygen therapy

	<15 h·day ⁻¹		>18 h·day ⁻¹	
	Fixed O ₂ n=34	Portable O ₂ n=14	Fixed O ₂ n=6	Portable O ₂ n=19
Rest h·day ⁻¹	13.2	ns	13.9	15
Outside h·day ⁻¹	2.1	ns	1.8	0.1
Distance walked m·day ⁻¹	658	ns	432	20

therapy more than 18 h·day⁻¹. The two groups of patients using fixed or portable oxygen more than 18 h·day⁻¹ had comparable initial lung function tests and exercise tolerance. Thus, the ambulatory equipment allowed these patients, who were almost constantly under oxygen, to leave home and walk.

No incident, accident or technical problem occurred during the study which prevented a reliable analysis of the use of this oxygen source. 25% of patients had

(22/33) and 55% of patients with gaseous oxygen (28/51). This group of patients used oxygen the longest (18 h·day⁻¹) and had the best daily activities score.

In addition, one patient out of two, with gaseous oxygen, and two patients out of three with liquid oxygen mentioned an improvement of their condition with portable oxygen. The feeling of security and freedom experienced by all patients provided by quiet equipment, and autonomous refill was increased for those with liquid oxygen.

However, there are factors which explain the absence or the restricted use of portable oxygen in its effective utilization outside. Half the patients with gaseous oxygen mentioned the equipment's weight, as opposed to a third of those with liquid oxygen. However, most of the patients carried their equipment and only 10% used a caddy. The restricted autonomy of the source is another frequently quoted factor which explains the preference for liquid oxygen. The most criticized feature was the equipment's aesthetics. Patients complained that the source, and particularly the nasal prongs, were conspicuous, making its use outside the home difficult. Patients felt that the equipment exposed and revealed their handicap.

Lastly, in an attempt to predict the use of portable oxygen, research into the initial medical and sociodemographic data was made through statistical analysis (typological analysis). No strict criterion appeared in our homogenous group of patients. Age, ventilatory, gasometric and functional data were not linked to the global daily duration of oxygen therapy or to the use of portable oxygen. Thus, the poor users of portable oxygen were not always clinically the worst starters. On the other hand, there was no clear correlation between social data and the use of portable oxygen, but the groups' sizes were too unequal to allow us to draw a conclusion.

Moderate dyspnoea, longer distances walked, arterial desaturation during the walking test, and former fixed oxygen therapy appeared as favourable elements for the use of portable oxygen but did not provide significant correlation. Preservation of physical activity when oxygen therapy was prescribed also seemed a good criterion since portable oxygen allowed the continuation rather than the improvement of physical activity.

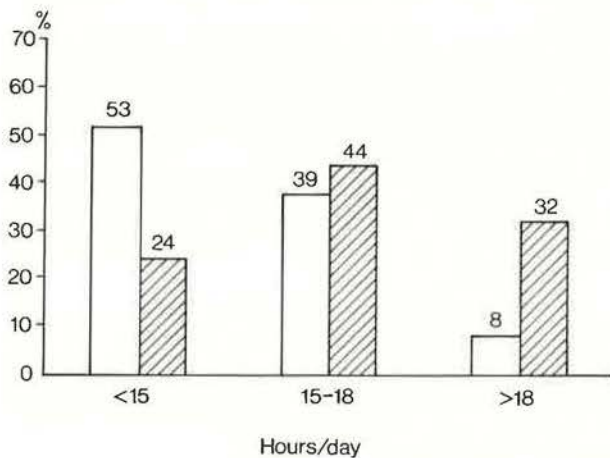


Fig. 2. — Mode of use of portable O₂. Percentage of patients according to the type of portable O₂.

□ Gaseous O₂, n=51; ▨ Liquid O₂, n=33.

never used portable oxygen. These were essentially patients with gaseous oxygen (19/51) as opposed to patients with liquid oxygen (2/33). The reason given most of the time was the fear of a lack of oxygen and delivery difficulties. 15% of patients used portable oxygen only at home. These were essentially patients with liquid oxygen (9/33) as opposed to patients with gaseous oxygen (4/51). The convenience and comfort of liquid oxygen (refill upon demand) explained its widespread home use. Only 60% of patients (50/84) used portable oxygen outside their homes and its immediate vicinity (garden). The use of both types of oxygen was almost the same: 67% of patients with liquid oxygen

Discussion

This study of 159 COPD patients on LTOT, with its medical and home follow-up over one year, was meant to estimate the benefit of randomized portable oxygen.

The population was homogenous in both the nature and the evolution of the disease. During the year of follow-up, respiratory insufficiency remained stable without spontaneous gasometric improvement, in spite of only six weeks observation before inclusion in the study, which may sometimes be insufficient [10]. The groups, determined at random, were similar at the beginning and throughout the study. This study provides the following answers to the initial objectives.

No significant difference appeared between fixed oxygen and portable oxygen groups concerning clinical, function, or survival data at the end of the study. This confirms the classical data [1, 2] on the latency of the effects of oxygen therapy. The possible benefit of longer daily duration of oxygen therapy seen in the portable oxygen group requires a longer time span for an accurate appraisal.

Portable oxygen increases the patient's daily duration of oxygen therapy. Daily oxygen therapy increased progressively for all patients during the first three months of the study. This was due to the patient's progressive adaptation to his equipment and above all to the interviewer's visits. This shows the benefit of informative and regular supervision of patients, but maximum benefit is achieved within the first three months after which no further improvement is noted [11].

However, mean duration of oxygen therapy remained poor in the fixed oxygen group (where more than half of the patients took oxygen less than 15 h-day⁻¹) and was significantly higher in the group of patients with portable oxygen. This improvement was obtained using the usual oxygen therapy techniques (oxygen sources, nasal prongs) without any particular aesthetic device. Thus, portable oxygen usefully complements a fixed source of oxygen therapy and encourages long daily oxygen therapy sessions. However, similar improvement to that obtained with portable oxygen could perhaps result from improved fixed oxygen equipment used at home.

Above all, portable oxygen improves the quality of life of the most assiduous patients, who use portable oxygen outside the home. This factor is more prominent than the benefit observed in the daily duration of oxygen therapy. For us this advantage alone justifies the effort of installing portable oxygen.

On the other hand, as many as 40% of our patients with portable oxygen did not use it adequately. One reason could be that these patients did not move around or that their exercise habits were very reduced, performed mainly at home and not requiring extra oxygen. This was not likely to be the case in our study, since one of the prerequisites was the patient's ability to walk at least 200 m with the portable equipment. Conversely, a good level of physical activity at the time of prescription can provide an efficient use of portable oxygen. This technique favours the maintenance of physical activity rather than its improvement.

The weight of the portable oxygen source can handicap walking. On the other hand, the increase in oxygen supply usually covers the extra oxygen uptake required for carrying the extra weight [12]. The weight can also be limited by only filling with the quantity of liquid oxygen required or by carrying the equipment on a caddy. Better information and a training period could be beneficial.

The restricted autonomy of the portable source was only felt for gaseous oxygen. In fact, the 2 or 3 h autonomy provided by the flow rate used was seldom exceeded by the patients. Oxygen saving devices [13, 14] can be offered.

The major handicap came from the aesthetics of the equipment used. It is frequently experienced by elderly patients who are afraid of the instruments and their impact on family and friends [15]. Technical improvements [16], and better information to the patients and to the public are possible, even desirable.

These restricting factors explain why 40% of the patients do not use portable oxygen, or do so sparingly. The factors are maximum in the present study because we used standardized techniques, which could be improved, but show the subject's "real compliance". For the patients using portable oxygen without restriction, gaseous or liquid oxygen give similar results. This indicates that technical aspects do not determine restriction, and that the psychological factor is predominant [15].

Finally, can the characteristics of an ideal portable oxygen patient, among a standard patient population such as ours, be individualized? No strict predictable criterion was found in this initially homogenous group. The degree of physical activity at the time of prescription, which could be maintained with portable oxygen, and arterial desaturation during exercise indicating the need for extra oxygen, seem to be the best though not strong, prediction criteria. It would probably be more practical to offer a 3-month trial period, during which strict supervision would allow the evaluation of portable oxygen therapy use and advantages of its maintenance.

We conclude that in most COPD patients under LTOT, portable oxygen increased the daily duration of oxygen therapy and, above all, improved the quality of life of the most compliant patients using portable oxygen outside for walking sessions.

Only 60% of the patients with portable oxygen liked it. The weight, the limited autonomy, and, above all the equipment's lack of aesthetics, were the restricting factors quoted most frequently.

No strict predictive criteria for effective use were found in this study. Thus, before necessary improvements of equipment are made, we recommend strict supervision for three months following the prescription of portable oxygen in order to estimate its use and therefore its usefulness.

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References

1. MRC Working Party. — Long term domiciliary oxygen therapy in chronic hypoxic cor pulmonale complicating chronic bronchitis and emphysema. *Lancet*, 1981, i, 681–686.
2. Nocturnal Oxygen Therapy Trial Group. — Continuous or nocturnal oxygen therapy in hypoxemic chronic

obstructive lung disease: a clinical trial. *Ann Intern Med*, 1980, 93, 391-398.

3. Jones MM, Harvey JE, Tattersfield AE. - How patients use domiciliary oxygen? *Br Med J*, 1978, 1, 1397-1400.

4. Vergeret J, Tunon de Lara M, Douvier JJ, Freour P, Cardinaud JP, Courty G, Taytard A. - Compliance of COPD patients with long term oxygen therapy. *Eur J Respir Dis*, 1986, 69, (Suppl. 146), 421-425.

5. Levi-Valensi P, Muir JF, Laroche D, Aubry P, Weitzenblum E. - Résultats à long terme de l'oxygénothérapie à domicile par cylindre gazeux classique. Incidence de l'oxygène portable. *Rev Fr Mal Respir*, 1978, 6, 437-440.

6. Pedinielli JL, Defache S, Levi-Valensi P, Miraoui J. - Observance de la prescription chez les IRC en oxygénothérapie. *Rev Fr Mal Respir*, 1983, 11, 627.

7. Vergeret J, Cardinaud JP, Courty G, Taytard A. - L'oxygénothérapie de déambulation. *Bull Eur Physiopathol Respir*, 1986, 22 (Suppl. 9), 45-51.

8. Quanjer P. - Standardized lung function testing. *Bull Eur Physiopathol Respir*, 1983, 19 (Suppl. 5), 1-95.

9. MacGavin CR, Gupta SP, McHardy GJR. - Twelve minutes walking test for assessing disability in chronic bronchitis. *Br Med J*, 1976, 1, 822-823.

10. Levi-Valensi P, Weitzenblum E, Pedinielli JL, Racineux JL, Duwoos H. - Three months follow-up arterial blood gases in candidates for LTO: a multicentric study. *Am Rev Respir Dis*, 1986, 133, 547-551.

11. Vergeret J, Mathieu JP, Sadania A, Bellvert P, Plantard Y, Taytard A. - Réalisation de l'OLD par IRCGO en Association: intérêt de la surveillance. Abstracts Congrès Pneumologie de Langue Française, Grenoble, 1987.

12. Brambilla I, Arlati S, Micaleff E, Sacerdoti C, Rolo J. - Portable oxygen corrects hypoxemia without significantly increasing metabolic demands. *Am Rev Respir Dis*, 1985, 131, 1, 51-53.

13. Tiep BL, Nicotra B, Carter R, Belman MJ, Mittman C. - Evaluation of low flow oxygen conserving nasal canula. *Am Rev Respir Dis*, 1984, 130, 500-502.

14. Tiep BL, Belman MJ, Mittman C, Phillips R, Otsap B. - A new pendant storage oxygen conserving nasal canula. *Chest*, 1985, 187, 381-383.

15. Pedinielli JL. - Aspects psychologiques du handicap respiratoire. In: Le traitement ambulatoire des handicapés respiratoires, Vol 1. Masson, Paris, 1982, pp. 115-121.

16. Petty TL. - Pulmonary rehabilitation. Better living with new techniques. *Respir Care*, 1985, 30, 98-107.

Oxygénothérapie portable, l'utilisation et le profit chez des patients BPCO hypoxémiques sous oxygénothérapie de longue durée (OLD). J. Vergeret, C. Brambilla, L. Mounier.

RÉSUMÉ: Le but de cette étude est d'évaluer les effets de l'oxygène portable sur la durée quotidienne de l'oxygénothérapie et sur les activités quotidiennes chez des patients BPCO hypoxémiques sous oxygénothérapie de longue durée (OLD). Deux modes d'OLD, déterminés par tirage au sort, ont été prescrits à 159 patients BPCO (139 hommes, 62 ± 8 ans, PaO_2 : $7,2 \pm 0,9$ kPa): groupe A (n=75): concentrateur d'oxygène seul; groupe B (n=84): bouteilles portables d'oxygène gazeux et concentrateur d'oxygène (groupe B1, n=51) ou oxygène liquide (groupe B2, n=33). Les patients ont été suivis sur un an avec: bilan médical et bilan fonctionnel respiratoire tous les 3 mois; visite mensuelle à domicile avec questionnaire sur la durée journalière d'oxygénothérapie, le mode d'utilisation des appareils d'oxygénothérapie et les activités quotidiennes; mesure objective de la consommation d'oxygène. Les résultats montrent que: il n'existe pas de différence clinique ni fonctionnelle significative entre les groupes A et B au départ et tout au long de l'étude; dans le groupe B la durée quotidienne d'oxygénothérapie est significativement plus longue que dans le groupe A ($17 \pm 3,5$ h·j⁻¹ vs 14 ± 3 h·j⁻¹, $p < 0,01$), sans différence entre les groupes B1 et B2; les activités quotidiennes sont globalement semblables pour les groupes A et B. Cependant, seuls 60% des patients du groupe B (55% du groupe B1, 67% du groupe B2) utilisent leur appareil portable hors du domicile et pour la marche. Chez ces patients, l'oxygénothérapie de déambulation permet de réaliser les plus longues durées d'oxygénothérapie (18 h·j⁻¹ en moyenne) et surtout de conserver des activités régulières à la fois à l'intérieur et à l'extérieur de leur domicile. Aucun critère prédictif strict de ce mode d'utilisation n'a été trouvé dans cette étude concernant une population initialement très homogène. Nous concluons que dans l'OLD, l'oxygénothérapie portable est utile mais qu'une surveillance régulière est indispensable au cours des 3 premiers mois suivant sa prescription pour juger de son utilisation et donc de son utilité. *Eur Respir J*, 1989, 2, 20-25.