

A Nurse-Led Clinic to Optimise Ambulatory Oxygen Therapy

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SUMMARY OF KEY RESEARCH FINDINGS

This real-world observational study assessed 218 consecutive patients referred to a dedicated nurse-led ambulatory oxygen therapy (AOT) clinic.¹ Referrals were reviewed, and, when appropriate, patients underwent an on-site assessment. All AOT devices were available for patients to test, and exercise testing was performed to select the most appropriate device and titrate oxygen flow according to the patient's requirements during exertion.

Most referrals (72.9%) were for treatment initiation. However, following assessment, 37.3% of patients did not meet criteria for AOT, and 2.6% declined treatment. Notably, despite the absence of a current indication, 45.6% of patients who did not meet criteria had previously been prescribed a portable oxygen cylinder. Among patients newly prescribed AOT, only 51% met the study-defined adherence threshold (≥ 0.5 hours/day) at the first follow-up, performed after a mean of 4.1 months, with a mean use of 1.5 hours/day.

In addition, 27.1% of referrals were for reassessment of pre-existing AOT.

Reassessment led to modification of the prescription in 80.7% of these patients and identified 8.8% who no longer had a current indication for therapy.

These findings suggest that a structured specialist pathway may help identify inappropriate prescriptions, detect suboptimal adherence, and provide opportunities to optimise existing therapy.

WHAT CHALLENGE DOES THIS ADDRESS?

AOT is increasingly prescribed in patients with chronic respiratory disease.² Exertional respiratory failure is commonly defined as a peripheral saturation below 88% during exertion, although eligibility and recommendations vary across indications and underlying respiratory diseases, and should also take into account the patient's level of outdoor activity.³ Most of the evidence supporting the use of AOT has been derived from patients with COPD.^{4,5} Importantly, oxygen should not be prescribed for breathlessness alone in the absence of hypoxaemia.

Whenever possible, the indication for AOT should be assessed using a standardised exercise test. Once an indication has been established, effective oxygen delivery depends not only on prescribing oxygen, but also on selecting an appropriate device and titrating oxygen flow during exertion according to the patient's physiological requirements.

AOT can be delivered through several systems, including compressed oxygen cylinders, portable oxygen concentrators, and liquid oxygen. Depending on the device, oxygen may be delivered continuously or in pulse-dose mode. Device selection should take into account the patient's ability to trigger pulse-dose delivery, correction of exertional desaturation, device weight and portability, battery life,

and patient preferences and willingness to use the device. Whenever possible, oxygenation should therefore be assessed using the device and settings that the patient will actually use in daily life. Education, adherence assessment, and periodic reassessment should also be considered integral components of AOT management rather than separate steps after prescription.

RELEVANCE TO EUROPEAN PRACTICE

For HCPs, the authors' findings highlight three practical targets: avoiding AOT in patients without a current indication; ensuring that patients who require AOT receive an appropriate device at an individually titrated flow; and systematically reassessing treatment after initiation. Together, these measures may contribute to a more rational and individualised use of AOT.

This is particularly relevant because current evidence highlights substantial implementation challenges in home oxygen therapy, including suboptimal adherence and devices that may be poorly matched to patients' needs. The specialist respiratory nursing model used in the authors' clinic also illustrates the potential contribution of respiratory nurses to patient education, device assessment, adherence monitoring, and follow-up.

The low adherence observed in the authors' cohort further suggests that prescription should not be considered the endpoint of care. Follow-up should establish not

only whether oxygen is being used, but also whether the prescribed device is practical in daily life, adequately corrects hypoxaemia during activity, and remains clinically indicated.

WHAT ARE THE NEXT STEPS FOR THE RESEARCH?

Prospective multicentre studies should compare structured AOT pathways with usual care. Objective measures of device use should be combined with patient-centred outcomes, as well as healthcare resource use and costs.

Ultimately, the relevant question is not simply whether AOT is prescribed, but whether the right patient receives the right device, at the right flow, for a meaningful clinical purpose that is regularly reassessed.

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