

Management of COPD, OHS, and ALS patients: real-world evidence from the MONTANA research programme

The MONTANA studies¹⁻⁵ leverage the French National Health Data System (SNDS), a comprehensive database covering nearly 68 million individuals and enabling large-scale real-world evidence generation. Using this resource, 54,545 Chronic Obstructive Pulmonary Disease (COPD) patients, 8,842 Obesity Hypoventilation Syndrome (OHS) patients and 3,443 Amyotrophic Lateral Sclerosis (ALS) patients in France, receiving non-invasive ventilation (NIV) were analysed, revealing substantial heterogeneity in care pathways prior to NIV initiation.

Initiation of home NIV in COPD and OHS patients

COPD patients¹

66% of COPD patients were initiated on NIV after the first severe exacerbation and 34% received home NIV only after multiple or prolonged hospitalisations. Early initiation was associated with positive outcomes on mortality and prevention of severe exacerbations.

OHS patients⁴

66% of OHS patients were initiated on NIV without prior use of the Continuous Positive Airway Pressure machine (CPAP), while only 25% had short- or long-term CPAP beforehand. Initiating NIV without prior CPAP, despite guideline recommendations, was associated with higher mortality and drop-out rates.

Learnings for clinical practice

	COPD ¹⁻³	OHS ⁴
Identification	Obstructive Sleep Apnoea (OSA) screening should be encouraged, as overlap syndrome patients appear to gain greater benefit from long-term NIV than COPD patients without OSA	Earlier identification and initiation after hospitalisation could reduce mortality rates ⁶
Treatment timing & pathway	Underdiagnosis remains a key issue in both COPD and OHS, leading to delayed treatment initiation and missed opportunities to improve outcomes	Early initiation of home NIV reduces severe exacerbations
Outcomes	NIV initiation without prior CPAP is associated with increased mortality and higher drop-out rates	Long-term home NIV improves survival in patients with hypercapnic COPD
Long-term management	Adherence to ATS and ERS guidelines recommending CPAP as first-line therapy resulted in a positive impact on mortality and adherence	High NIV discontinuation rates highlight the need for consistent NIV initiation strategies, proactive monitoring, and sustained follow-up to support long-term adherence

ALS patient trajectories and outcomes⁵

Cluster	Patient profile	Care trajectory	NIV initiation timing	Survival after NIV	Survival after diagnosis
A (21%)	Typical disease progression. Low comorbidity, less obesity rates	High physiotherapy use	Late	Short	Within expected range
B (26%)	Slow disease progression. Younger, low comorbidity, more OSA, less depression/anxiety	Low healthcare use	Late	Long	Prolonged
C (25%)	Moderate disease progression. Higher comorbidity burden	Frequent hospitalisations, ICU use	Early	Long	Reduced
D (32%)	Rapid disease progression. Severe clinical profile	Intensive, end-stage care	Early	Short	Poor

Learnings for clinical practice

ALS patients follow highly heterogeneous trajectories before and after NIV initiation. **Decisions to initiate NIV are primarily driven by patient profile, care trajectory and the rate of respiratory decline, while timing alone does not reliably predict outcomes.** These findings suggest that NIV initiation should be individualised and tailored to each patient's clinical profile and disease progression.

This content is intended for health professionals only.

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