

BACKGROUND

Home mechanical ventilation (HMV) is a well-established treatment for patients with chronic ventilatory failure. In Europe, the majority of published data comes from a single survey. The lack of national epidemiological data on chronic respiratory failure (CRF), and the economic burden for the management of this condition prompted the Italian Association of Hospital Pulmonologists (AIPO) to create a Register for HMV, as already implemented in other European Countries.

OBJECTIVES

- To collect epidemiological data on HMV;
- to investigate the standards of HMV prescription in Italy;
- to build up a certified, electronic system as potential national Register of HMV.

METHODS

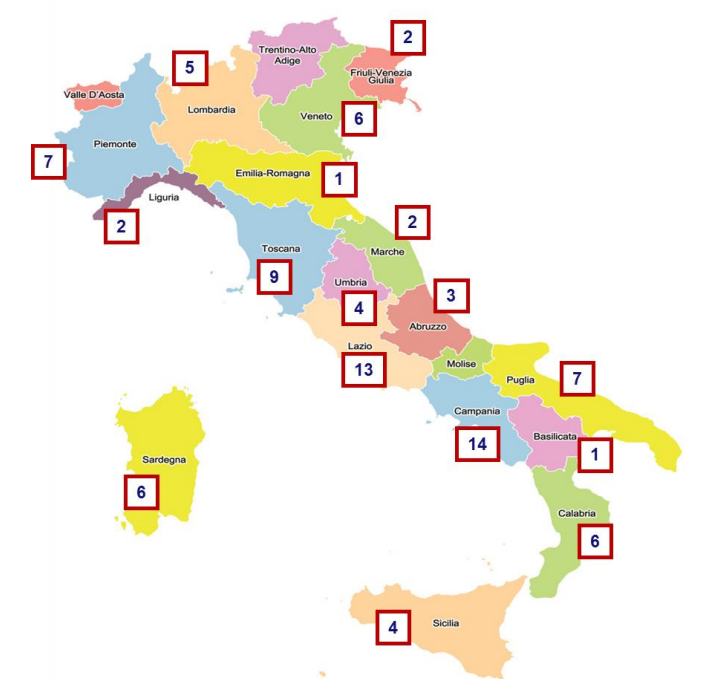
Real-life, cross-sectional, multicentre study conducted from October 2010 to December 2015 in **92 Italian Centres** (Figure 1).

Data on patients already in treatment with HMV or new HMV prescriptions were collected through a central web-based system (eCFR: electronic Case report Form).

Inclusion Criteria:

- ≥18 years patients
- already receiving HMV treatment or new HMV prescriptions during the observational period.

Figure 1 – Centres' distribution



RESULTS

Among **2329 subjects enrolled**, 803 were excluded for missing data and 261 for Obstructive Sleep Apnoea (OSA) in treatment with Continuous Positive Airway Pressure (CPAP). The remaining **1265 subjects** (Table 1, 67,5±13,3yrs, 58% males) were included in this analysis, characteristics are illustrated in Tables 2-3 and Figure 2-3. Results on HMV prescription are illustrated in Figures 4-7_{a-b}.

Table 1 – Patients enrolled for each centre by Region

ITALIAN REGIONS	N. CENTRES	PATIENTS (N, %)
Abruzzo	3	18 (1,4)
Basilicata	1	1 (0,08)
Calabria	6	12 (0,9)
Campania	14	94 (7,4)
Emilia Romagna	1	1 (0,08)
Friuli Venezia Giulia	2	139 (11)
Lazio	13	121 (9,6)
Liguria	2	61 (4,8)
Lombardia	5	53 (4,2)
Marche	2	3 (0,2)
Piemonte	7	99 (7,8)
Puglia	7	65 (5,1)
Sardegna	6	40 (3,2)
Sicilia	4	153 (12,1)
Toscana	9	199 (15,7)
Umbria	4	8 (0,6)
Veneto	6	198 (15,7)
TOTAL	92	1265 (100%)

Table 2 – Subjects' characteristics

	(N.)	(%)	Mean	95% CI	SD±	Median (min-max)
Gender	1265	M: 58% F: 42%				
Smoke	1265	Yes: 7,6% No: 54,4% Ex: 38,4%				
Age, years	1265		67,5	66,77-68,27	13,6	70,0 (18-95)
Exacerbations (previous year)	822		1,097	1,00-1,19	1,36	1 (0,00-5,00)
Ospitalizations (previous year)	842		0,77	0,71-0,84	0,99	1 (0,00-8,00)

Table 3 – Arterial Blood Gases and pH at enrolment

	N	Mean	95% CI	SD
PH	790	7,34	7,31-7,37	0,05
PH in MV	1198	7,37	7,34-7,40	0,05
PAO2	795	58,19	57,32-59,06	12,54
PAO2 in MV	1200	74,41	72,12-76,69	40,30
PACO2	796	59,39	57,05-61,73	33,62
PACO2 in MV	1200	48,32	47,45-49,20	15,48

Figure 2 – Underlying chronic disease: COPD and NO-COPD (A); NO-COPD: other diseases (B)

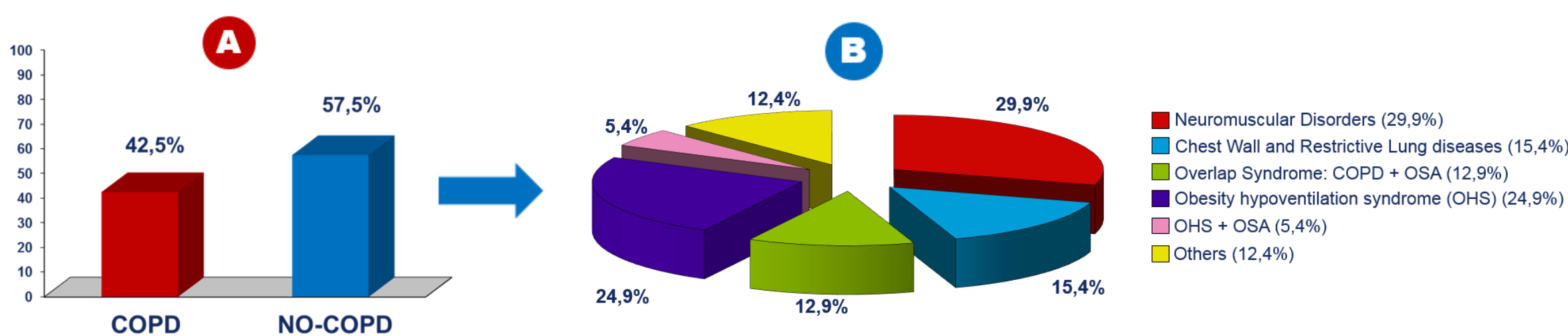


Figure 3 – Self-care patients

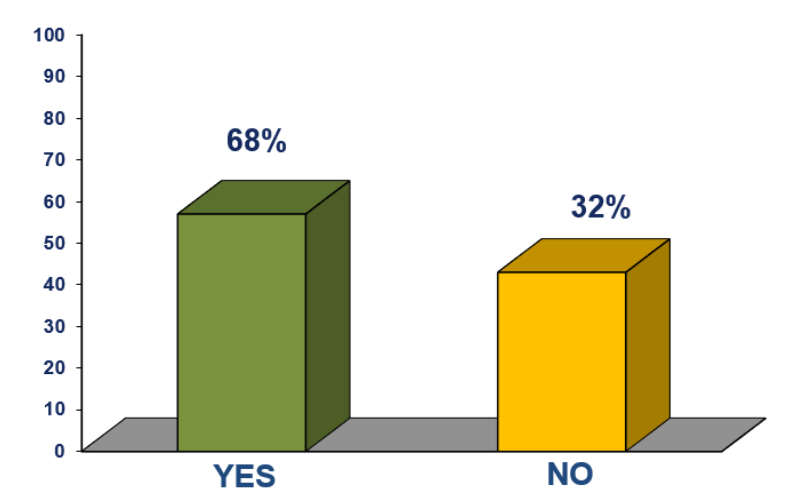


Figure 4 – HMV prescription: previously in HMV treatment and new prescriptions

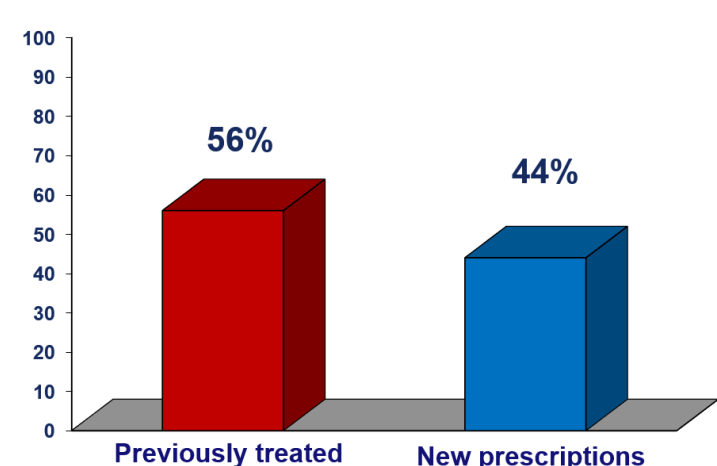


Figure 5 – HMV prescription: modes

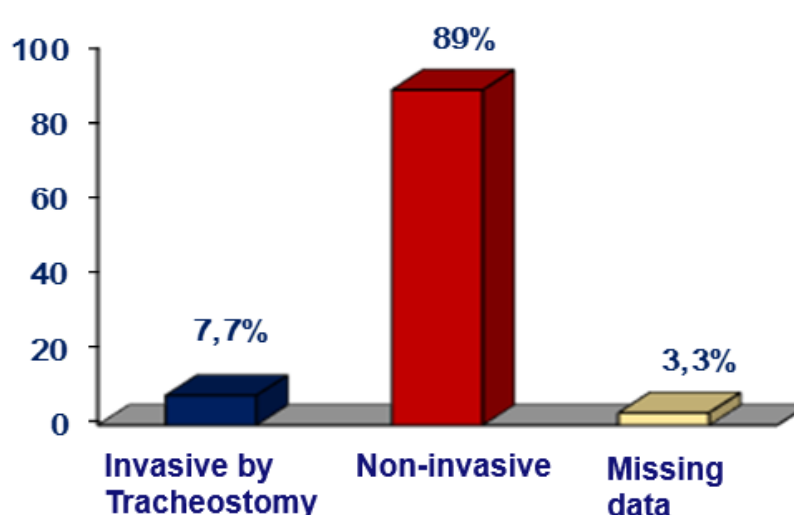


Figure 6 – HMV prescription: hours/die

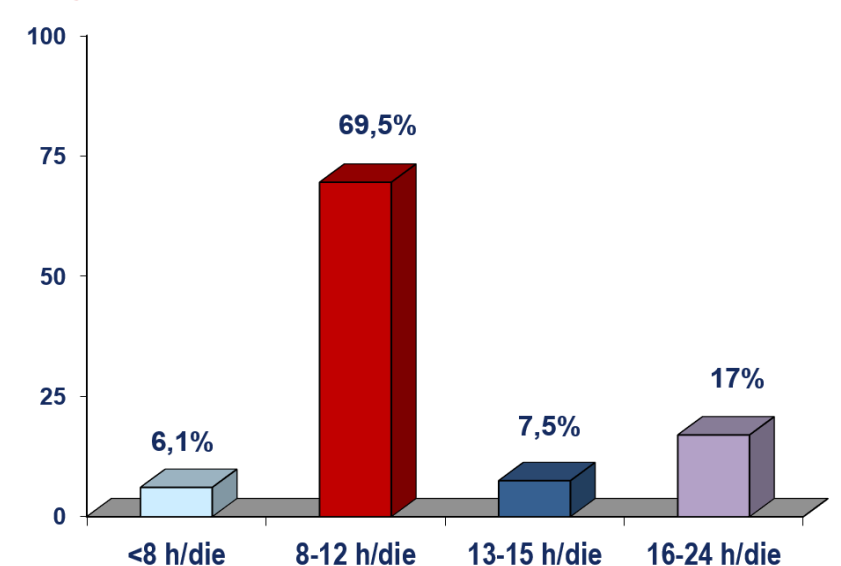


Figure 7a – Use of Oxygen during HMV

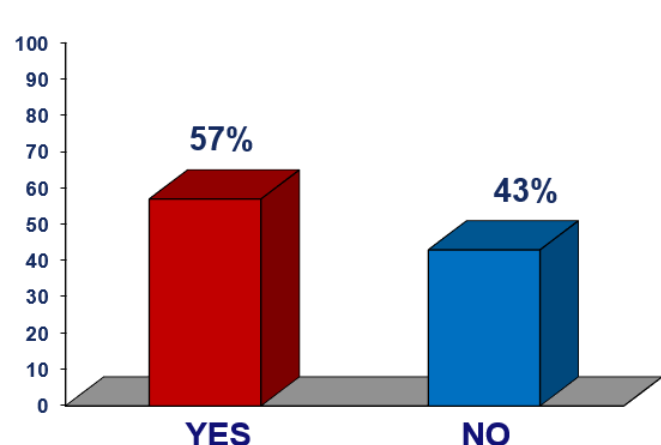
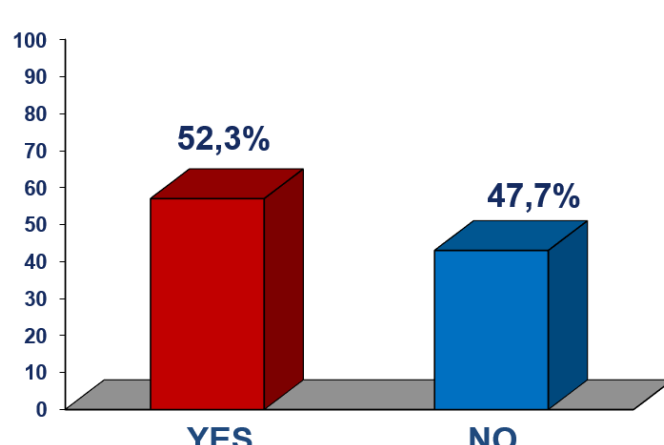


Figure 7b – Long Term Oxygen Therapy



CONCLUSIONS

This is the first national register collecting longitudinal data on patients treated with HMV. The register, if extensively implemented, has the potential to become a useful tool for the clinical governance of CRF.