

A real-world study on Italian administrative healthcare data to describe patients with chronic obstructive pulmonary disease by therapeutic pattern and exacerbation rate

Carlo Piccinni¹, Giulia Ronconi¹, Letizia Dondi¹, Silvia Calabria¹, **Leonardo Dondi¹**, Irene Dell’anno¹, Alice Addesi², Immacolata Esposito², Ovidio Brignoli³, Fabiano Di Marco⁴, Claudio Micheletto⁵, Nello Martini¹

- 1. Fondazione Ricerca e Salute (ReS), Roma, Italy
- 2. Drugs and Health Srl, Roma, Italy
- 3. Italian College of General Practitioners and Primary Care, Firenze, Italy
- 4. Department of Health Science, Università degli Studi, Milano, Italy
- 5. Respiratory Medicine Unit, Verona University Hospital, Verona, Italy

Conflict of interest: CP, GR, LetD, LeoD, SC, ID, and NM are employees of Fondazione ReS and have no competing interests with any financial organizations regarding the material discussed in the abstract. OB has no competing interests with any financial organizations regarding the material discussed in the abstract. FDM reports grants and personal fees from AstraZeneca, Boehringer Ingelheim, GSK, Chiesi, Zambon, Novartis, Guidotti/Malesci, Menarini, Mundipharma, Sanofi, TEVA, Levante Pharma, Neopharmed Gentili, outside this work. CM reports fees as a speaker in national and international congress from Astrazeneca, GSK, Sanofi, Novartis, Chiesi, Menarini, Guidotti, Berlin Chemie, Boehringer, Zambon, outside this work.

Funding: This study was funded by an unconditional grant by AstraZeneca

METHODS

From the database of Fondazione Ricerca e Salute (ReS) (4.6 million inhabitants), patients aged ≥45 years with COPD in 2023 were categorized according to the therapeutic strategy (index date=first drug dispensation in 2023) into patients receiving triple therapy (TT), as single-inhaler (SI) or multiple-inhaler (MI), dual therapy (DT), other respiratory strategies and none of the previous (i.e., untreated). Demographics, comorbidities, occurrence of moderate and/or severe AECOPD within 12 months preceding the index date, and therapeutic strategies before AECOPD were assessed.

RESULTS

Patients with COPD were 82,034 (32.3/1,000 inhabitants aged ≥45; mean age was 75 years, 61.0% were male) Fig.1. By therapeutic strategy, 10,247 (12.5%) patients received SI-TT, 9583 (11.7%) MI-TT, 33,359 (40.7%) DT, 19,511 (23.8%) other strategies, and 9334 (11.4%) were untreated Fig.2. On average, DT patients were the youngest (mean age: 73 years), and MI-TT patients were the oldest (76 years) Tab 1. Around 60% of patients receiving TT, 62.1% DT and 59.3% other strategies had ≥3 comorbidities; cardio-metabolic chronic diseases were the most frequent Tab.2. A previous AECOPD occurred in 4859 (47.4%), 3071 (32.0%), 9497 (28.5%) and 4904 (25.1%) patients receiving SI-TT, MI-TT, DT and other strategies, respectively Fig.3. Despite the moderate/severe AECOPD, escalation to TT occurred in 27.4% and 19.6% patients previously receiving DT and other strategies, respectively, and in 19.1% of untreated patients Fig.4.

Figure 1. Flowchart describing the selection of the 2023 COPD cohort

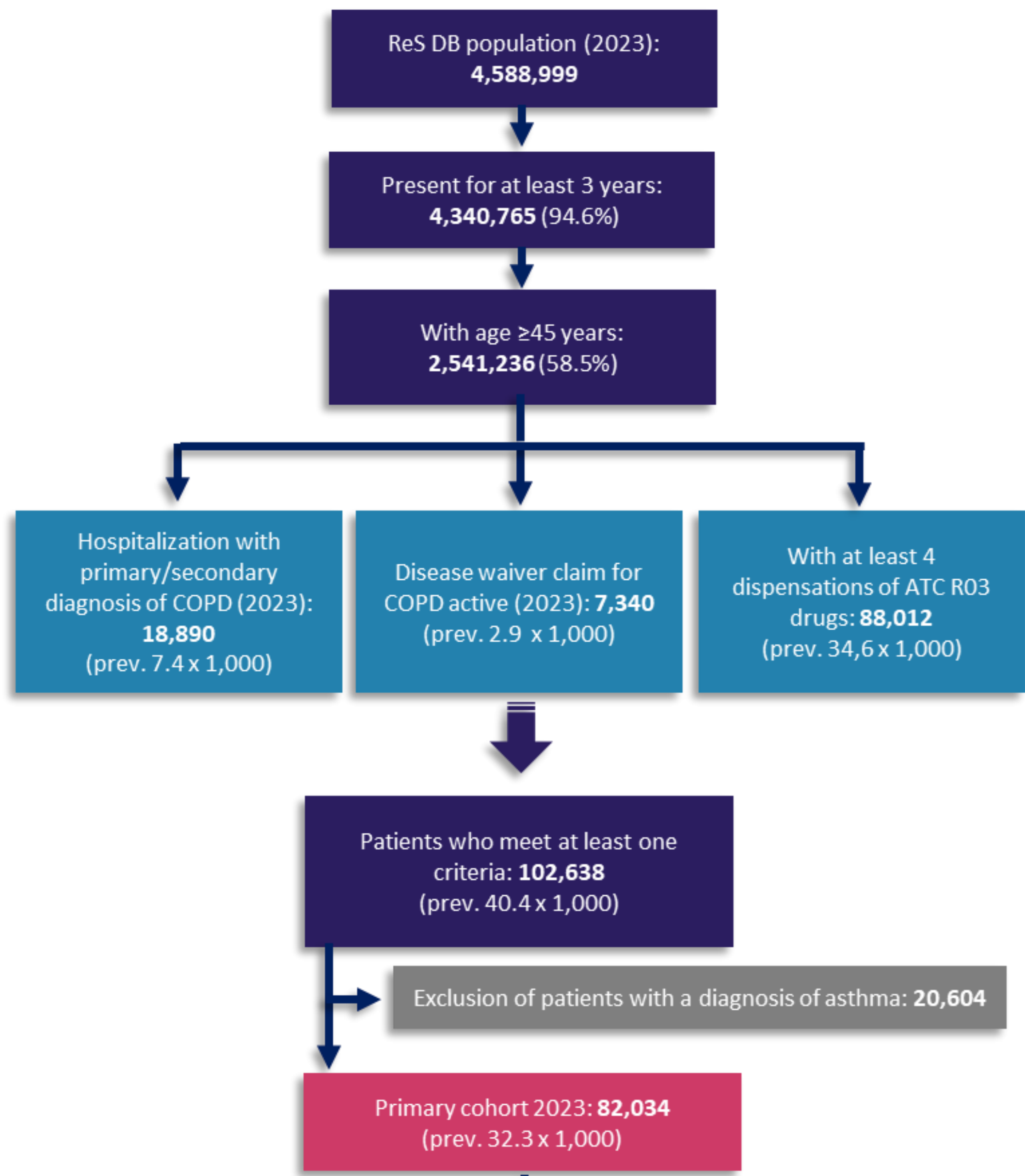


Figure 2. Percentage distribution of patients by drug therapy (presence/absence) and treatment type

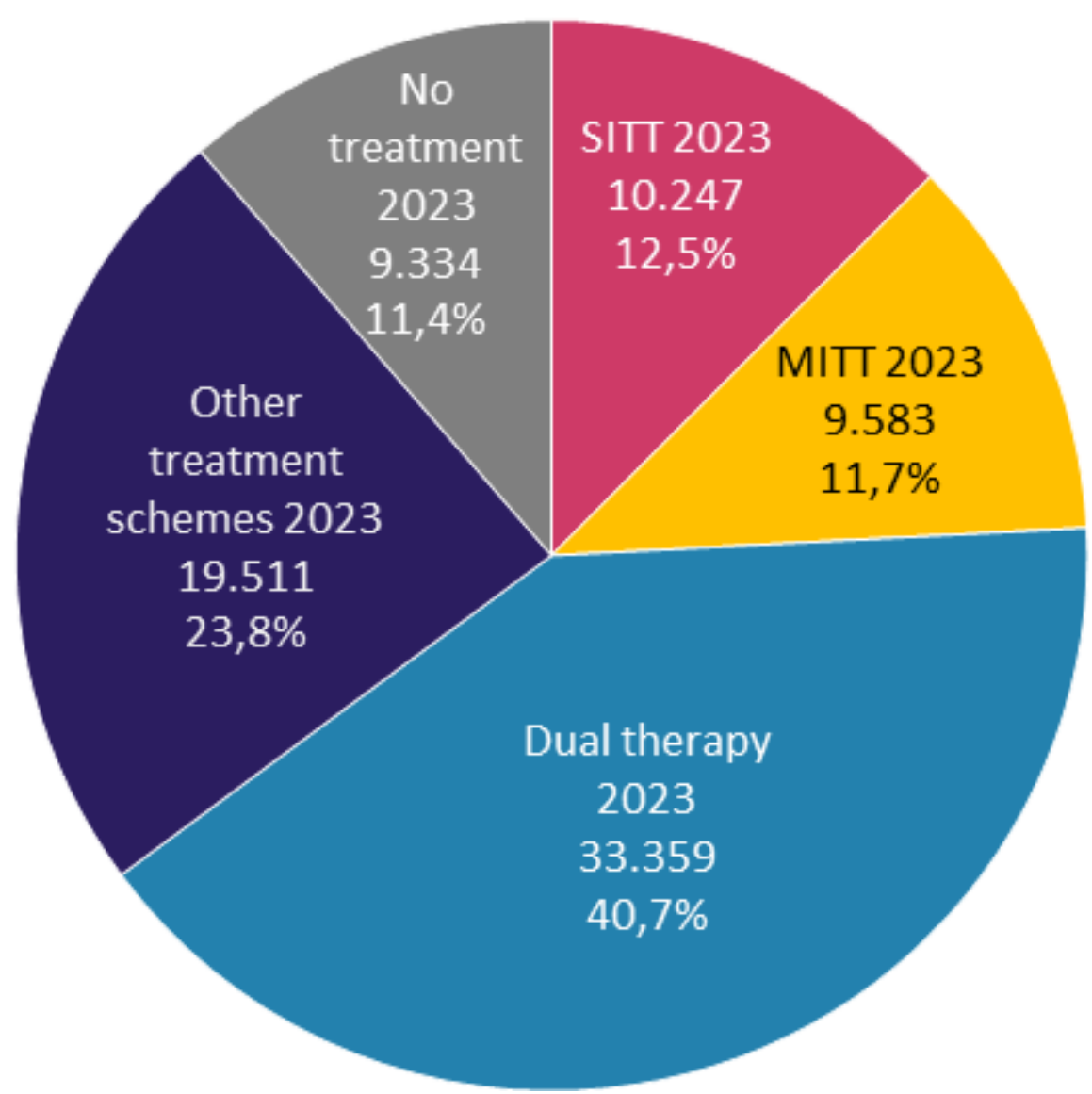
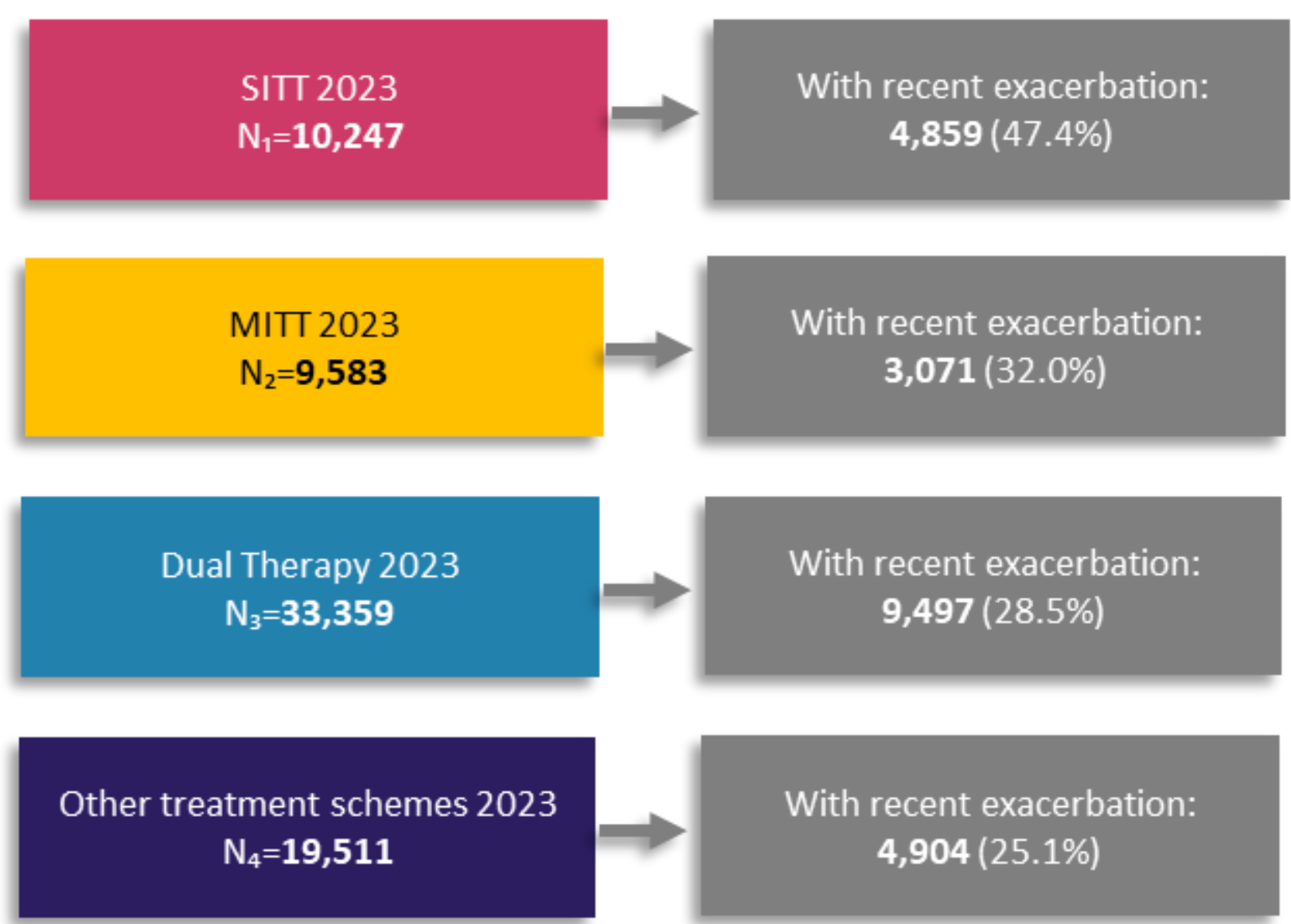


Figure 3. Selection of patients with COPD exacerbation in the 12 months prior to the index date



OBJECTIVE

To describe patients with chronic obstructive pulmonary disease (COPD) according to the therapeutic strategy and assess the occurrence of acute exacerbation (AECOPD) and concurrent therapeutic changes, through administrative data from the Italian National Health Service.

CONCLUSIONS

From this study, we observed that a relevant proportion of patients with COPD did not experience a treatment escalation after the occurrence of moderate/severe AECOPD despite GOLD recommendations. The treatment patterns might be affected by the presence of prescription restrictions for triple therapy introduced in Italy in 2021.

Table 1. Mean age, standard deviation, and median age with IQR of cohorts by sex

Sex	SITT 2023 N ₁ =10,247		MITT 2023 N ₂ =9,583		Dual Therapy 2023 N ₃ =33,359		Other treatment schemes 2023 N ₄ =19,511	
	Average age (± st.dev.)	Median age (Q1;Q3)	Average age (± st.dev.)	Median age (Q1;Q3)	Average age (± st.dev.)	Median age (Q1;Q3)	Average age (± st.dev.)	Median age (Q1;Q3)
Female	75±10	76 (68;82)	77±11	78 (70;85)	73±12	74 (64;83)	77±12	79 (70;87)
Male	75±9	76 (69;81)	76±10	77 (69;84)	73±11	74 (65;81)	75±11	76 (68;84)
Total	75±9	76 (69;82)	76±10	77 (70;84)	73±12	74 (65;82)	76±12	77 (69;85)



Table 2. Absolute and percentage number of patients with comorbidity by cohort

Comorbidity	SITT 2023 N ₁ =10,247		MITT 2023 N ₂ =9,583		Dual Therapy 2023 N ₃ =33,359		Other treatment schemes 2023 N ₄ =19,511	
	n ₁	n ₁ /N ₁ %	n ₂	n ₂ /N ₂ %	n ₃	n ₃ /N ₃ %	n ₄	n ₄ /N ₄ %
Hypertension	8.556	83,5	7.990	83,4	25.377	76,1	16.091	82,5
Dyslipidemia	5.113	49,9	4.744	49,5	14.749	44,2	9.684	49,6
Diabetes	2.784	27,2	2.602	27,2	7.698	23,1	5.392	27,6
Heart failure	2.303	22,5	1.613	16,8	4.058	12,2	3.326	17,0
Cancer	2.309	22,5	1.819	19,0	5.727	17,2	3.498	17,9
CAD	2.210	21,6	1.701	17,8	4.550	13,6	3.609	18,5
Depression	1.217	11,9	1.271	13,3	3.999	12,0	2.666	13,7
Cerebrovascular diseases	1.170	11,4	1.024	10,7	2.992	9,0	2.473	12,7
Chronic kidney disease	1.080	10,5	840	8,8	2.232	6,7	1.770	9,1
Thyroid diseases	1.105	10,8	1.197	12,5	4.509	13,5	2.658	13,6
Arrhythmia	999	9,7	900	9,4	2.688	8,1	1.918	9,8
Hepatopathies	809	7,9	612	6,4	1.952	5,9	1.262	6,5

Figure 4. Percentage distribution of patients with recent exacerbation by therapy received before and after the event

