

# A REAL-WORLD ANALYSIS OF PHARMACO-UTILIZATION AND OUTCOMES OF PATIENTS ON PERINDOPRIL/AMLODIPINE/INDAPAMIDE FREE VS SINGLE-PILL COMBINATION IN ITALY

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## BACKGROUND AND OBJECTIVES

Sub-optimal adherence to antihypertensive treatment is an important cause of poor blood pressure control, and is associated with increased risk of CV events, comorbidities and mortality [1]. It has been reported that increasing the number of antihypertensive medications is associated with a higher rate of nonadherence [1].

## METHODOLOGY

**DATA SOURCE:** Data were extracted from administrative databases of Italian Healthcare Entities.

**POPULATION:** Adult patients treated with PER/AML/IND as **single-pill** or **free combination** (2 or 3 pills, during the period **2010-2020**) were included and categorized into **single-pill and free- cohorts**.

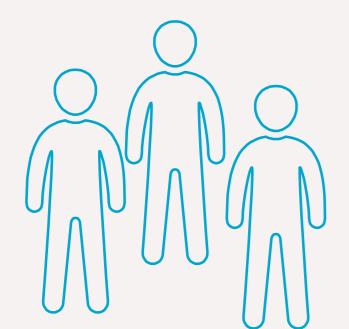
The **index date** corresponded to the first prescription of a single-pill combination (single-pill cohort) or the first prescription of the 3 drugs simultaneously (within 30 days) (free cohort).

**PROPENSITY SCORE MATCHING (PSM):** was applied to minimize selection bias and to reduce potential imbalances between the two cohorts

[the following variables were considered for PSM matching: age, sex, comorbidities (hypertensive disease, ischemic heart diseases, heart failure, cerebrovascular diseases, peripheral vascular diseases, diabetes, CKD disease; chronic obstructive pulmonary disease, psychiatric disease; co-treatments as ACE inhibitors, angiotensin II receptor blockers, beta blocking agents, calcium channel blockers, antithrombotic agents, antiarrhythmics, diuretics, lipid lowering drugs, digoxin, ivabradine, antiinflammatory drugs, antidepressants).

**KEY OBJECTIVE.** The objective of this **real-world analysis** was to evaluate and compare **medication adherence, cardiovascular (CV) events and mortality incidence** among 2 cohorts of patients treated with **Perindopril/Amlodipine/Indapamide (PER/AML/IND)** as a **free or single-pill combination in a real-world setting in Italy**.

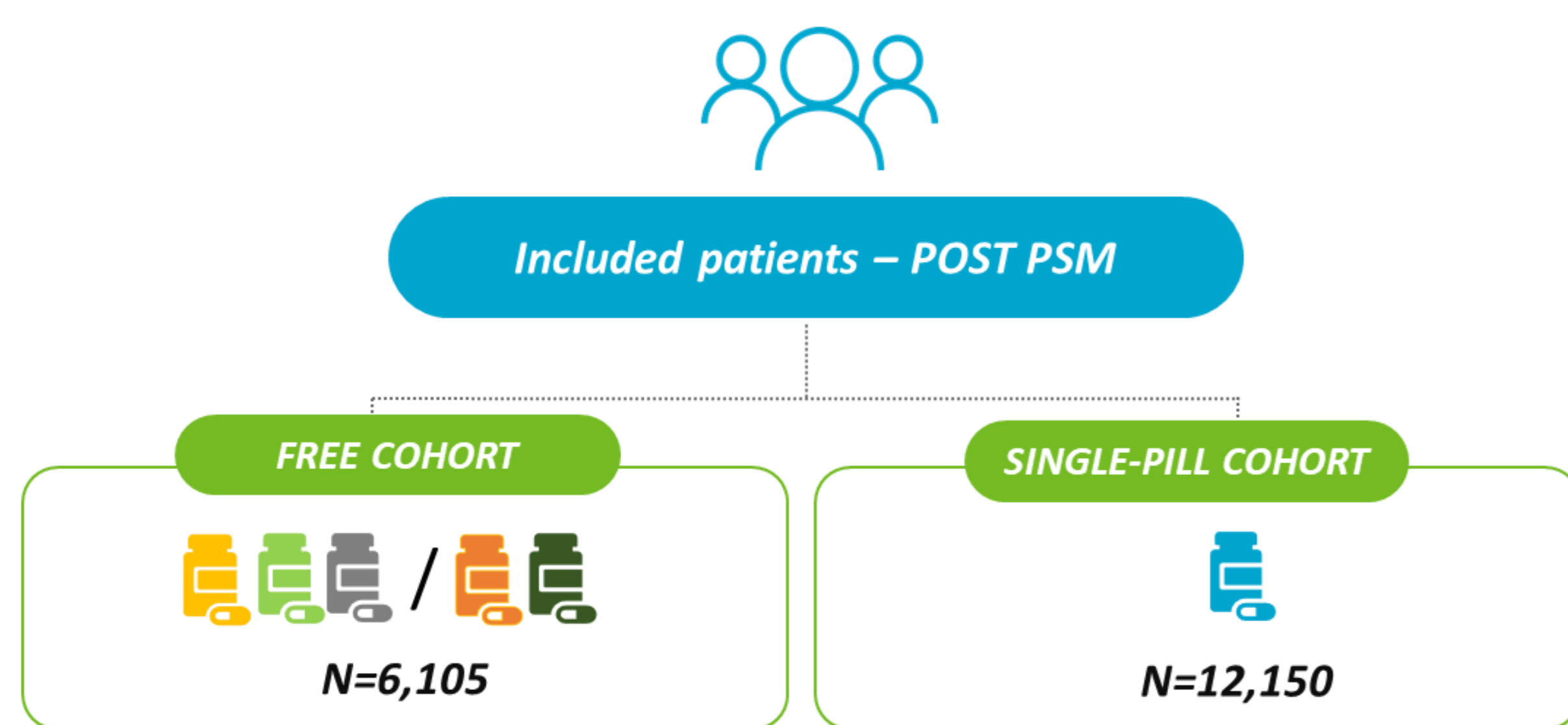
## RESULTS



### DESCRIPTION OF STUDY POPULATION

- ✓ The analysis included 37,365 patients (54.3% male, mean age 66.0±12.3 years) in the **single-pill cohort** and 6,105 (50.8% male, 68.2±11.9) in the free cohort.
- ✓ **Post-PSM**, cohorts were balanced for their characteristics and comprised:
  - 6,105 patients among **free-cohort**
  - 12,150 patients among **single-pill-cohort** (Fig.1)

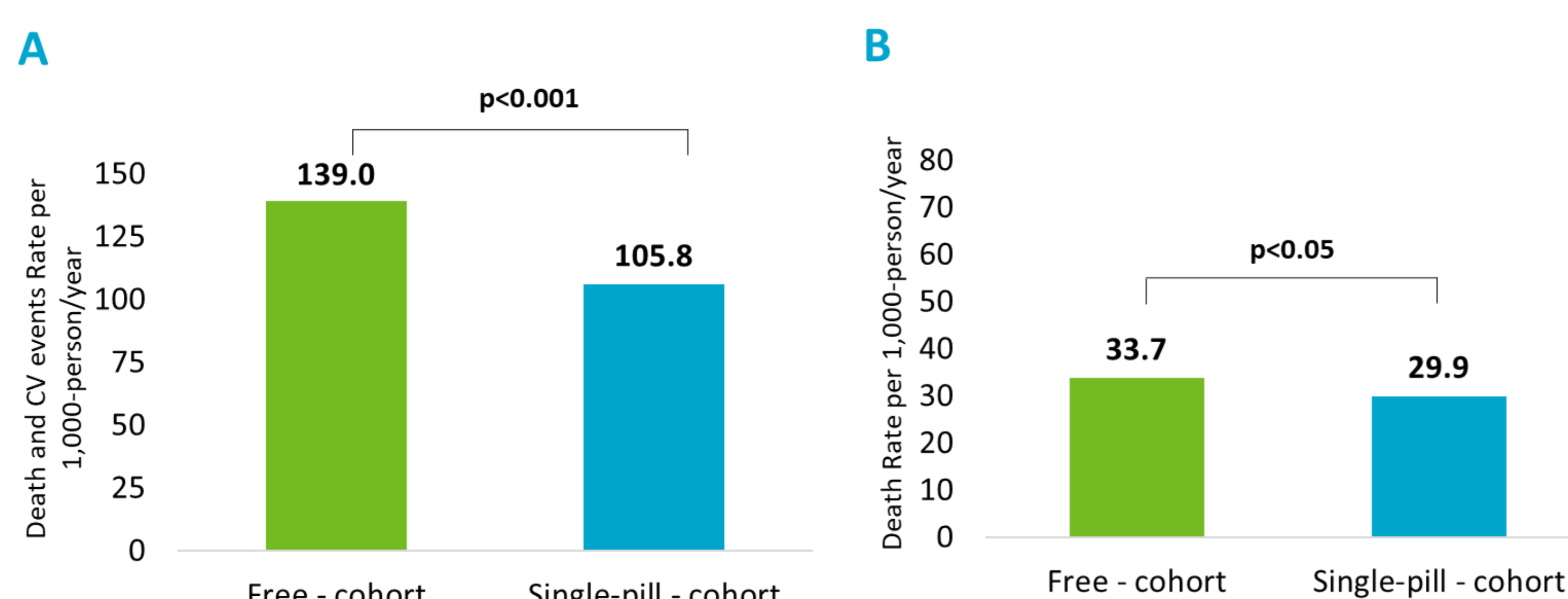
Figure 1. Stratification of included patients, post PSM



### INCIDENCE OF OUTCOMES – MORTALITY AND CV EVENTS – IN PSM-MATCHED COHORTS

- ✓ The incidence of **death and CV events as a composite endpoint was higher in the free-cohort** (139.0) versus the single-pill-cohort (105.8 per 1,000-person/year) ( $p<0.001$ ).
- ✓ The **mortality rate was higher in the free-cohort versus single-pill-cohort** (33.7 vs 29.9 per 1,000-person/year,  $p<0.05$ ), after one-year follow-up (Fig. 3).

Figure 3. The death and CV events rate as a composite endpoint (A) and death (B) in free vs single-pill cohorts.



### IN PSM-MATCHED COHORTS



**ADHERENCE:** was calculated as the proportion of days covered (PDC: PDC<40% non-adherence; PDC=40-79% partial adherence; PDC≥80% adherence), during 12 months follow-up.

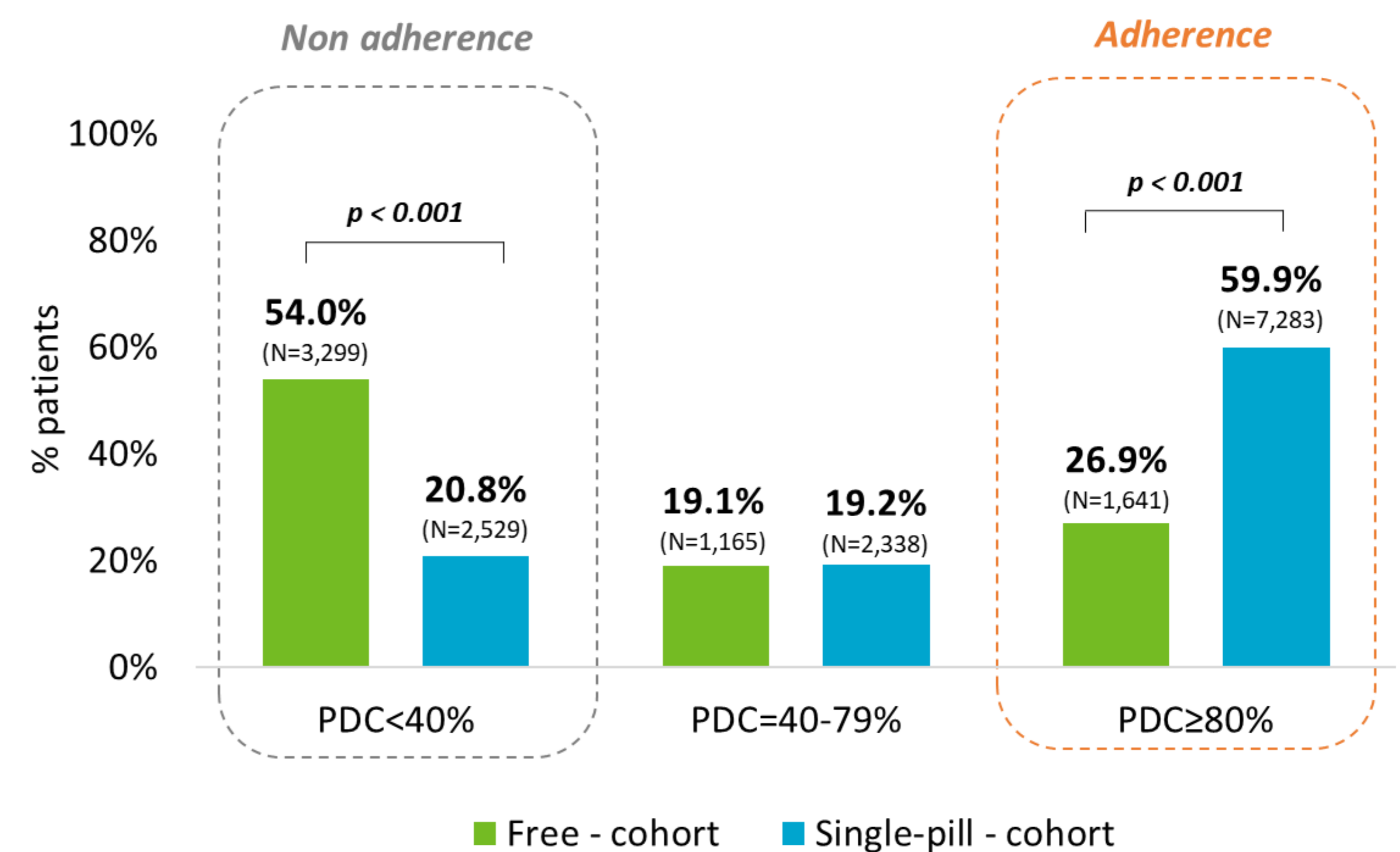
**OUTCOMES:** Incidence of mortality and CV events (ischemic heart disease, heart failure, cerebrovascular disease, peripheral vascular disease) was analyzed after the first year of follow-up and reported as event rate per 1,000-person/year.



### EVALUATION OF ADHERENCE TO INDEX TREATMENT IN PSM-MATCHED COHORTS

- ✓ The **proportion of adherent patients** (PDC ≥80%) was significantly higher in the single-pill cohort compared to the free cohort (**59.9% vs 26.9%,  $p<0.001$** ).
- ✓ Accordingly, there were **more non-adherent patients in the free** (54.0%) than in the single-pill (20.8%) cohort ( $p<0.001$ ), while similar values were observed for partial adherence (19%, both cohorts) (Fig. 2).

Figure 2. Adherence to treatment among the two PSM-matched cohorts, during one-year follow-up



### IMPLICATIONS FOR PRACTICE AND FUTURE RESEARCH

- ✓ The results of the present analysis, carried out in a **clinical practice Italian setting**, showed that regimen simplification could represent one of the strategies to pursue the improvement of adherence to antihypertensive medications.
- ✓ This strategy could be considered especially in **multi-comorbid populations**, such as elderly patients, under polypharmacy regimens.



[1] Borghi C, Desideri G, Tocci G, Trimarco B, Nati G. Aderenza alla terapia delle malattie cardiovascolari croniche: nuove soluzioni. G Ital Cardiol 2021;22(5 Suppl 1):e86-e91

## CONCLUSIONS

This real-world analysis among hypertensive patients showed that the treatment with PER/AML/IND as a **single-pill**, as opposed to free combination, could be associated with **better medication adherence** in the single-pill cohort at one year and with a **lower incidence of cardiovascular events and mortality**.