Acceptance Code: EE478

Do Triple Single-Pill Combinations Make a Difference in Treatment Adherence, Outcomes and Healthcare Resource Utilization in Hypertension? A Real-World Analysis of Patients on Perindopril/Indapamide/Amlodipine in Italy

ISPOR Europe 2022, Vienna, 6-9 November 2022

Jacques R. SNYMAN[1], Pathiyil Balagopalan JAYAGOPAL[2], Alexandra KONRADI[3], Luiz Aparecido BORTOLOTTO[4], Luca DEGLI ESPOSTI[5], Valentina PERRONE[5], Claudio BORGHI[6]

1.Forte Research (Pty ltd) and Private Practice South Africa; 2. Lakshmi Hospital, Palakkad 678013, India; 3. Almazov National Medical Research Centre, St.Petersburg, Russia; 4. Heart Institute (InCor) do Hospital das Clinicas-FMUSP, São Paulo, Brazil; 5. CliCon S.r.l., Società Benefit-Health, Economics & Outcomes Research, Bologna, Italy; 6. Department of Medical and Surgical Sciences, University of Bologna, Italy

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, mortality and healthcare costs [1]. It has been reported that increasing the number of antihypertensive medications is associated with a higher rate of nonadherence [1].

KEY OBJECTIVE. *The objective of this **real-world analysis** was to compare adherence, outcomes and healthcare costs in hypertensive patients prescribed perindopril/indapamide/amlodipine (PER/IND/AML) as single-pill vs free combination, in Italy.*

[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

METHODOLOGY

DATA SOURCE: This retrospective analysis used administrative databases of a sample of Local Health Units covering approximately 7 million health-assisted individuals.

POPULATION: Adult patients treated with **PER/IND/AML** during 2010-2020 were categorized into **2 cohorts**: those taking **single-pill or free** (defined as 2 or 3 pills) **combination**.

*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 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].*

IN PSM-MATCHED COHORTS

ADHERENCE: was calculated as the proportion of days covered (PDC) during 12 months of follow-up; patients with PDC≥80% were considered adherent.

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.

HEALTHCARE COSTS: **Total healthcare direct costs** (sum of costs for all-drugs, hospitalizations, outpatient services) covered by the Italian National Health System were reported in Euros (€).

RESULTS

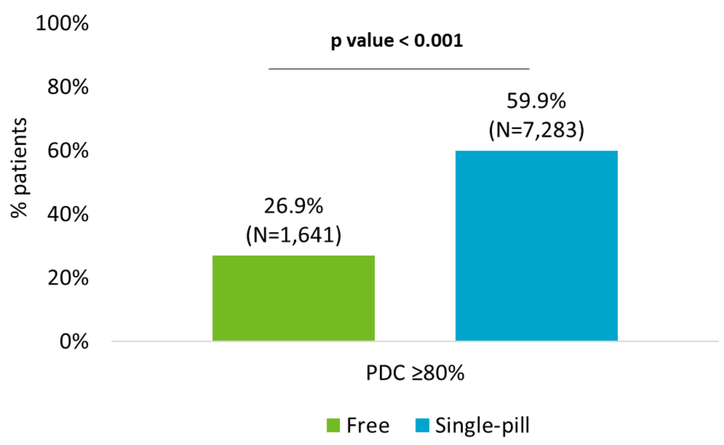
DESCRIPTION OF STUDY POPULATION

- ✓ 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: **12,150** patients among **single-pill-cohort** and **6,105** patients among **free-cohort.**

PATIENT ADHERENCE TO INDEX TREATMENT IN PSM-MATCHED COHORTS

- ✓ In the **single-pill-cohort**, a significantly **higher percentage** of patients were adherent versus the free-cohort (59.9% vs 26.9%, p<0.001) (**Figure 1**).

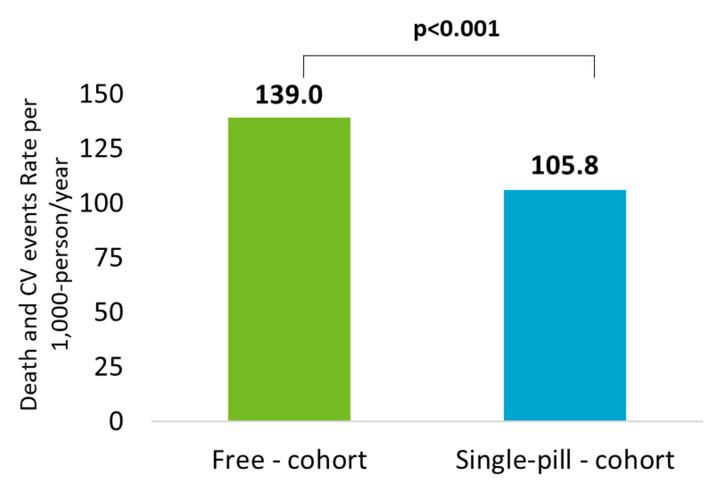
Figure 1. Adherence to treatment among the two PSM-matched cohorts, during one-year follow-up



INCIDENCE OF MORTALITY AND CV EVENTS IN PSM-MATCHED COHORTS

- ✓ The incidence **of death and CV events** (*composite endpoint*) **was significantly lower in single-pill-cohort** compared to free-cohort (105.8 vs 139.0 per 1,000-person/year, p<0.001) (**Figure 2**).

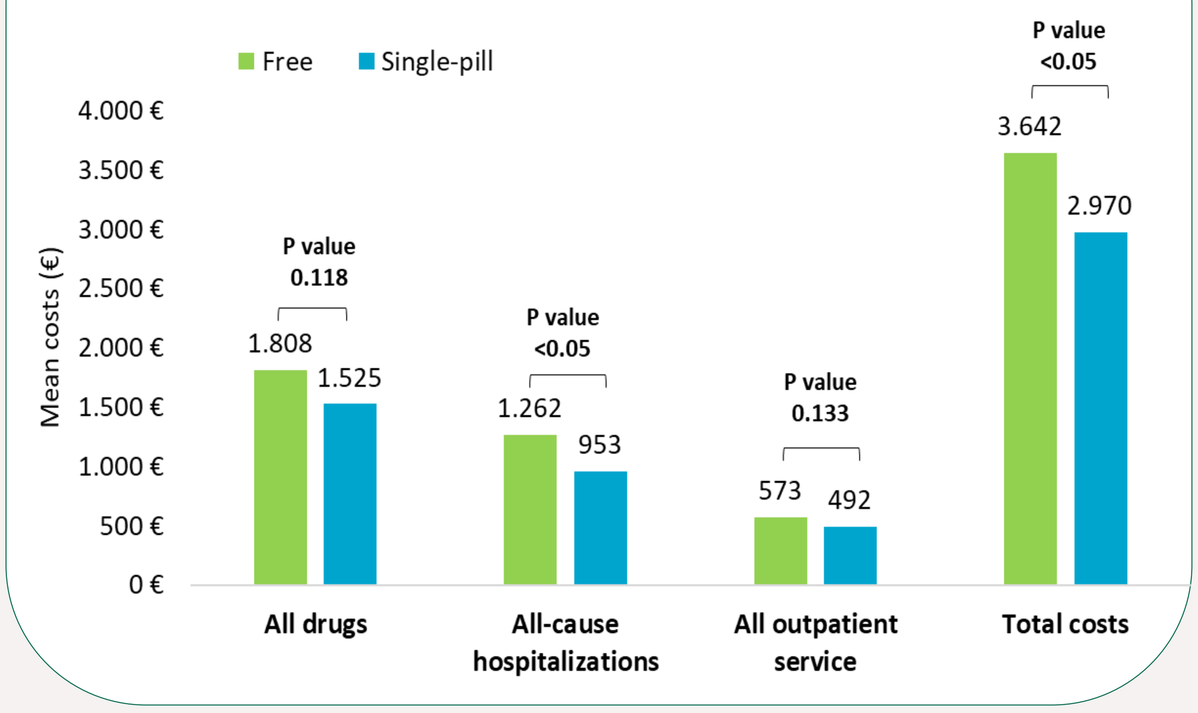
Figure 2. The death and CV events rate as a composite endpoint in free vs single-pill cohorts.



AVERAGE ANNUAL DIRECT HEALTHCARE COSTS IN IN PSM-MATCHED COHORTS

- ✓ In **free-combination versus single-pill cohort**, total healthcare direct costs/patient were higher (**€3,642 vs €2,970, p<0.05**). Among major cost drivers, drug-related costs did not decrease significantly (€1,808 vs €1,525, p=0.118), while hospitalizations decreased significantly (€1,262 vs €953, p<0.05) (**Figure 3**).

Figure 3. Mean annual healthcare direct costs evaluated during follow-up period



CONCLUSIONS

This real-world analysis carried out in Italian clinical practice setting demonstrates that **PER/IND/AML** as single-pill, compared with a free combination, **improved adherence and clinical outcomes** and **provided cost savings** to the Italian National Healthcare System (funder).

COI DISCLOSURES: *C.B. has received consultation fees and lecture honoraria from Servier, Novartis, Menarini Corporate, Novo Nordisk, Alfasigma, Sanofi; L.A.B. is a member of advisory board for Servier, Medtronics and Merck; J.R.S. is involved in data analyses and advisory services for Servier; P.B.J., A.K., L.D.E, V.P. declare no conflict of interest.*