

Real-World Analysis of Adherence, Outcomes and Healthcare Costs of Patients Under Quadruple Combination of Antihypertensives 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, 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 evaluate adherence, outcomes and direct healthcare costs in hypertensive patients treated with 4 antihypertensive drugs belonging to ACE-inhibitor/calcium-antagonist/diuretic/beta-blocker (ACE-I/CCB/DIU/BB) classes or with perindopril/amlodipine/indapamide/bisoprolol (PER/AML/IND/BIS), 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

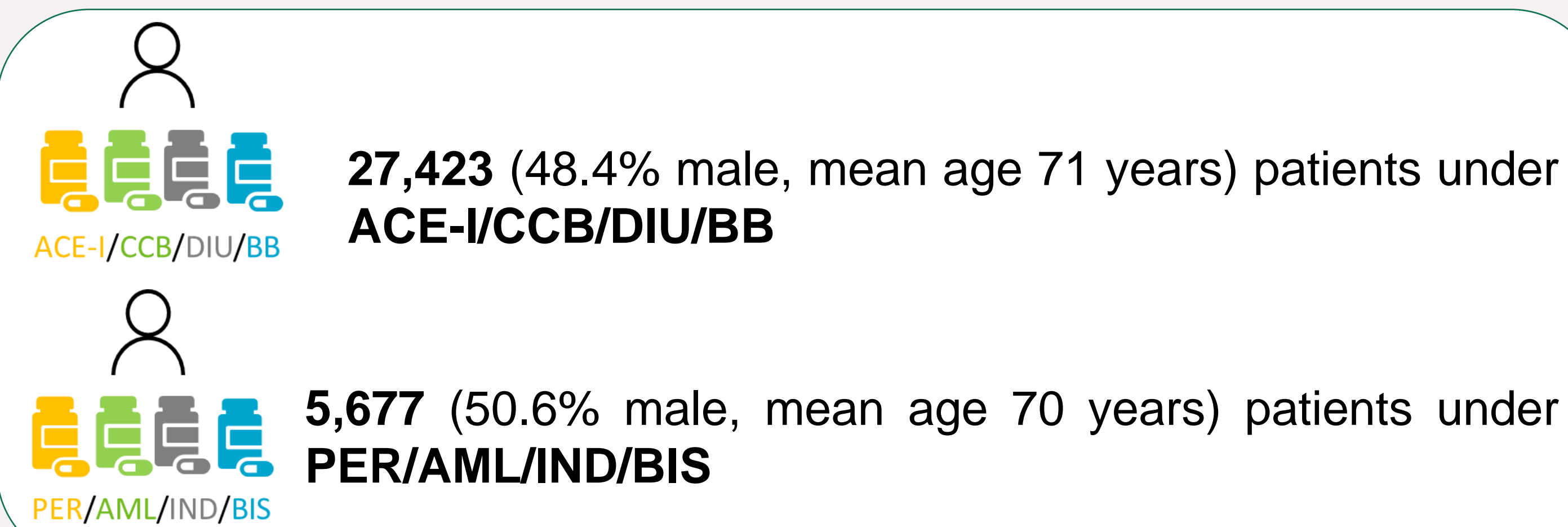
METHODOLOGY

DATA SOURCE: an observational analysis was performed using Italian administrative databases covering approximately 7 million health-assisted subjects. **POPULATION:** Adult patients prescribed with ACE-I/CCB/DIU/BB or PER/AML/IND/BIS during 2018 were included. Index-date corresponded to first prescription of the four drugs (prescribed within 30 days). Follow-up was 1 year after index-date.

ADHERENCE: adherence was evaluated as proportion of days-covered, PDC (PDC<40%= non-adherence; PDC=40-79%= partial-adherence; PDC≥80%= adherence). **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 mean healthcare direct costs/patient** (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

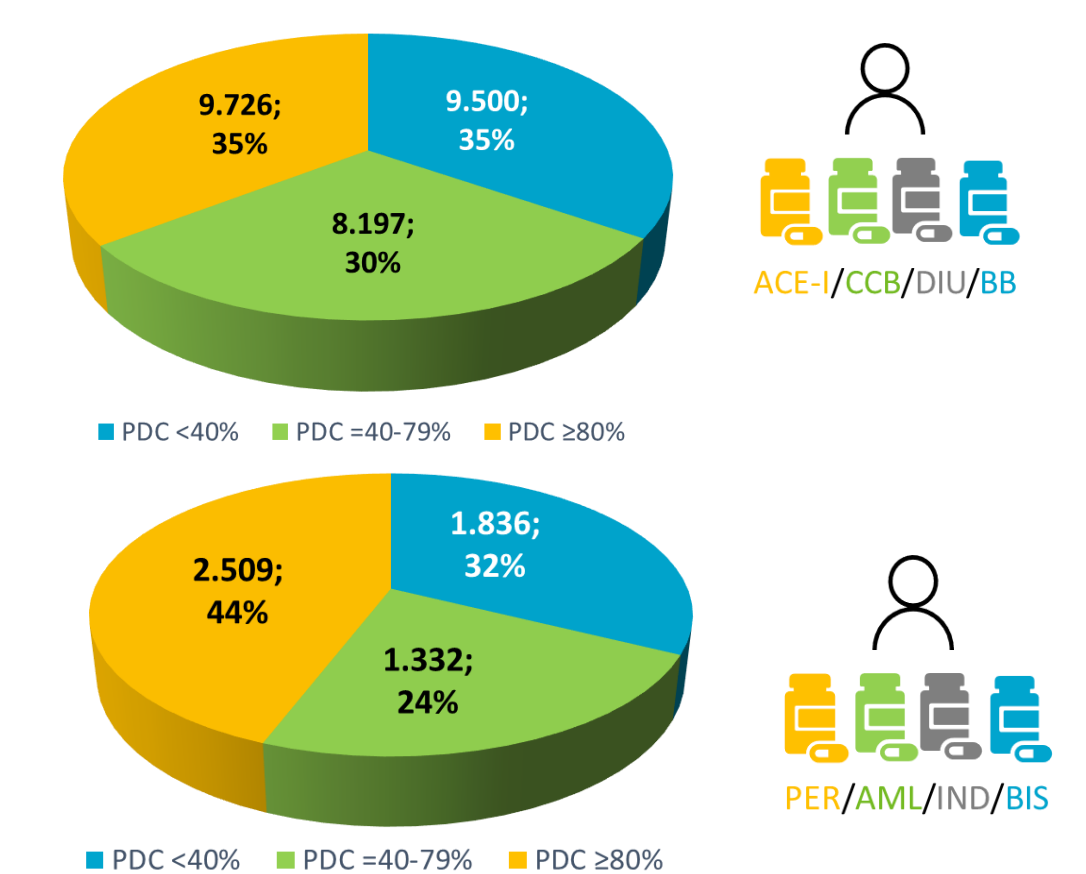


ADHERENCE TO INDEX TREATMENT

During one-year follow-up, 35% patients were adherent to ACE-I/CCB/DIU/BB, 30% partially-adherent, 35% non-adherent.

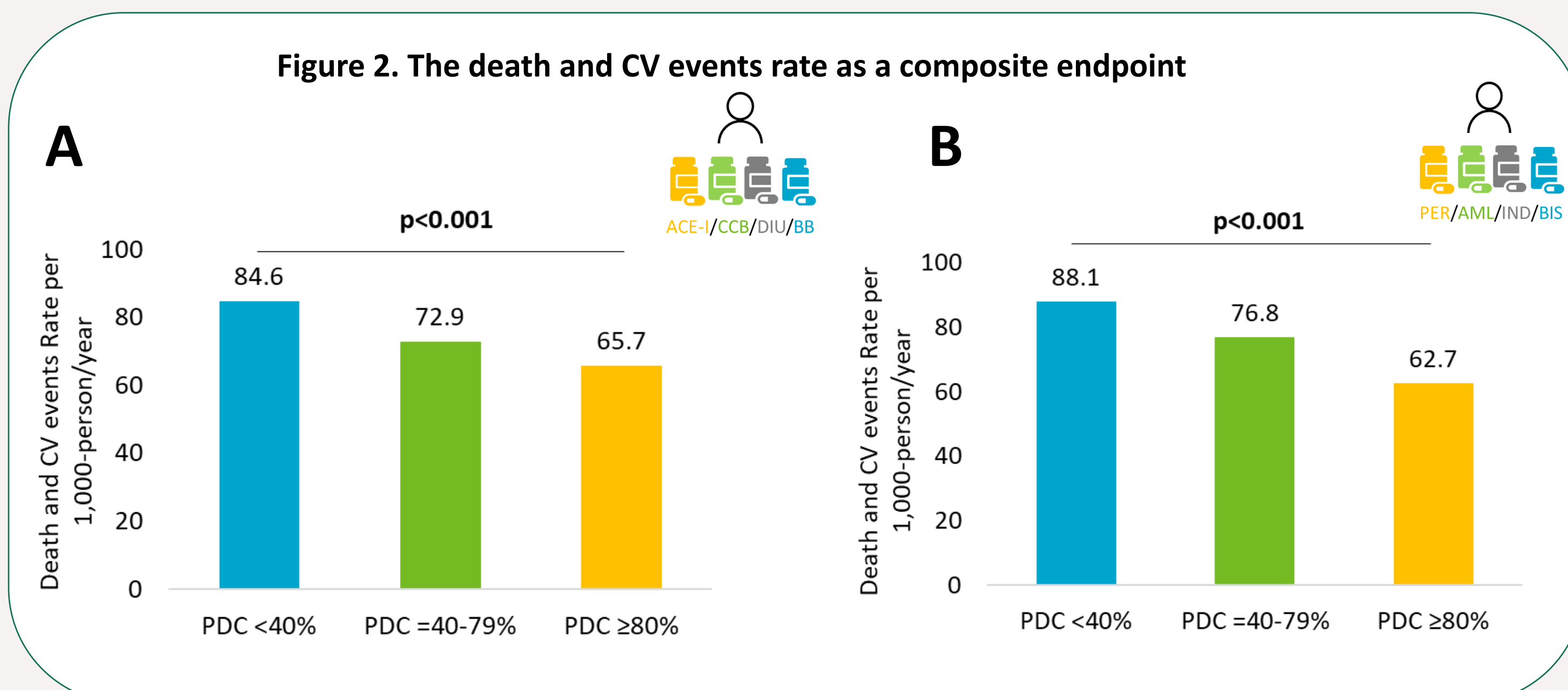
Among PER/AML/IND/BIS-treated patients, 44% were adherent, 24% partially-adherent, 32% non-adherent (Figure 1).

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



INCIDENCE OF MORTALITY AND CV EVENTS

In patients adherent to ACE-I/CCB/DIU/BB, death/CV events incidence rate decreased (65.7/1,000-person/year) versus non-adherent and partially-adherent (84.6 and 72.9/1,000-person/year, respectively, $p<0.001$) (Figure 2A).

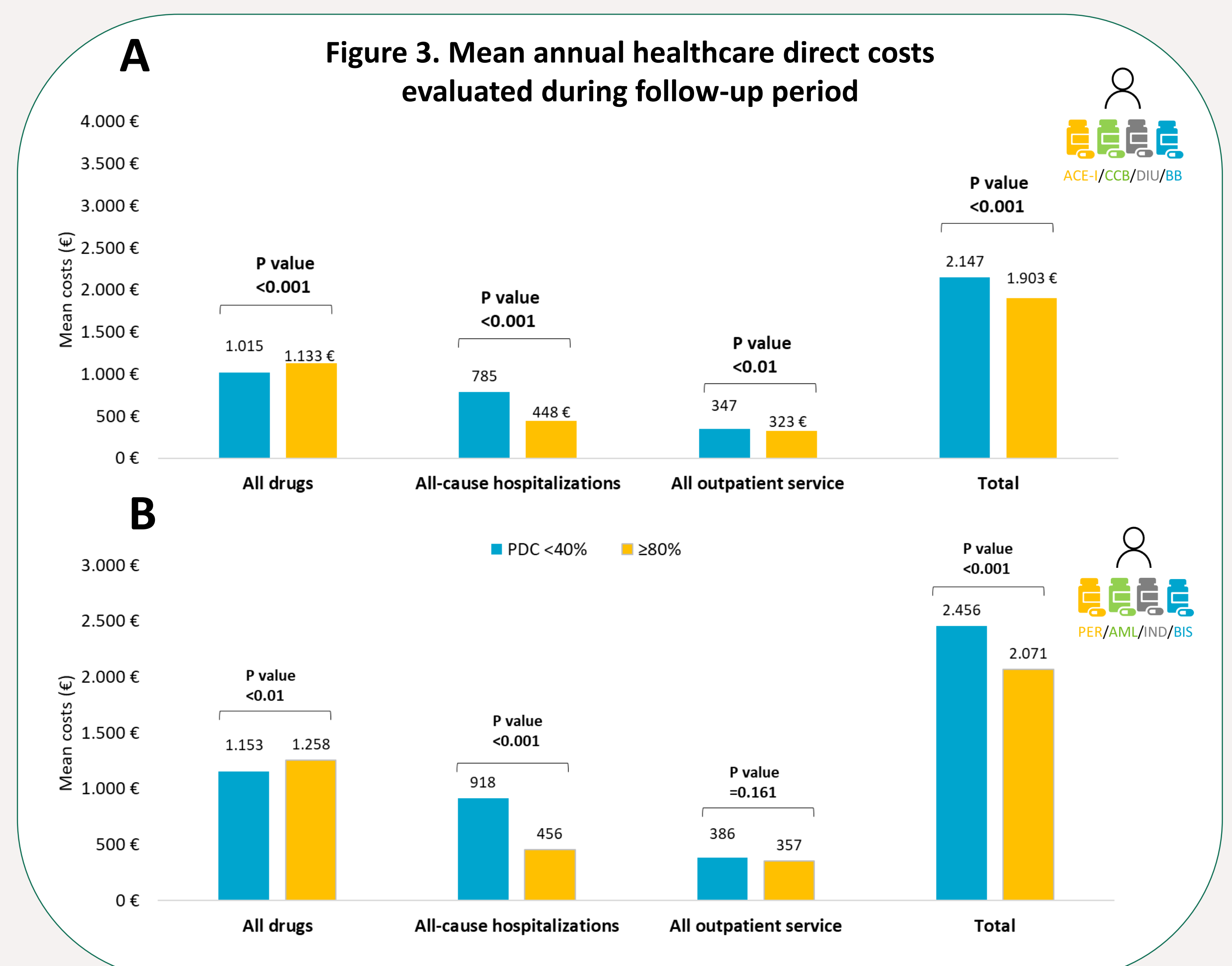


Similarly, in patients adherent to PER/AML/IND/BIS, death/CV events incidence rate decreased (62.7/1,000-person/year) versus non-adherent and partially-adherent (88.1 and 76.8/1,000-person/year, respectively, $p<0.001$) (Figure 2B).

COI DISCLOSURES: G.M. in the past 24 months has received compensations as speaker/chairman/consultant from: Astra Zeneca, Berlin Chemie, Böhringer Ingelheim, Gedeon Richter, Medtronic Vascular Inc, Menarini Int, Merck Healthcare KGaA, Medtronic Inc USA, Neopharm-Gentili, Novartis Pharma, Recordati, Sandoz, Sanofi, Servier; G.D. received honoraria (e.g. lecture fees) and fees for promotional materials (e.g. manuscript fee) from Menarini, Alfasigma, Bayer, BMS/Pfizer, Fidia and Servier; K.N. received honoraria (e.g. lecture fees) and fees for promotional materials (e.g. manuscript fee) from Berlin-Chemie/Menarini, Egis, Idorsia, Gedeon Richter, Krka, Medtronic, Novo Nordisk, Polpharma, Recordati, Sandoz and Servier; S.B., L.D.E. and V.P. declare no conflict of interest.

AVERAGE ANNUAL DIRECT HEALTHCARE COSTS

In ACE-I/CCB/DIU/BB (Figure 3A) and PER/AML/IND/BIS treated patients (Figure 3B), respectively, mean total annual cost/patient was higher for non-adherent patients (€2,147 and €2,456) compared to adherent patients (€1,903 and €2,071) ($p<0.001$).



CONCLUSIONS

This real-world analysis provides novel insights into concomitant use of four antihypertensive drugs in Italy.

Optimal adherence was observed in less than 50% of patients. In adherent patients, lower incidence of deaths/CV events and lower total healthcare costs were observed.