DISEASE: Cardiovascular Disorders

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An Italian real-world analysis of economic impact in patients with hypercholesterolemia treated with rosuvastatin/ezetimibe as free vs single-pill combination

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BACKGROUND AND OBJECTIVES

- The use of lipid-lowering therapy to control the levels of low-density lipoprotein cholesterol (LDL-C) is a cornerstone in cardiovascular (CV) prevention [1,2].
- Drug regimens based on single-pill combinations can simplify patient's therapy management, increase the chances to reach the lipid targets and ultimately alleviate the clinical and economic burden related to atherosclerotic disease. However, there is limited evidence demonstrating the added value of single-pill combination (SPC) for lipid management.

AIMS: This ***real-world analysis*** evaluated clinical characteristics and economic impact for the Italian National Health System in patients receiving rosuvastatin/ezetimibe (ROS/EZE) as free combination (FC) vs SPC.

METHODOLOGY

DATA SOURCE: A retrospective analysis was conducted on administrative databases of a pool of healthcare entities geographically distributed across Italy, covering about 7 million health-assisted residents (above 11% of the country population).

STUDY COHORTS AND TIME PERIODS: From January 2018 to June 2020, all adults prescribed with ROS/EZE were included, and then divided into FC and SPC cohorts.

TIME PERIODS

***Index-date*:** date of the first simultaneous prescription of the two lipid-lowering agents (within 1-month interval) or first prescription of SPC.

***Characterization period*:** all available period prior to the index-date, at least 12 months.

***Follow-up period*:** from the index date to the end of data availability (2.5 ± 0.8 years for FC; 1.6 ± 0.6 years for SPC), at least 12 months.

STRATIFICATION BY CV RISK: patients were divided into very high CV risk, high CV risk and moderate/low risk. *[level of **CV risk** was estimated considering the 2019 ESC/EAS Guidelines for the management of dyslipidaemias 2019 [3] adapted for the administrative database used. In particular, CV risk was determined during the characterization period before the index-date (any pharmacological treatments were evaluated during 12-month period before the index-date, while hospitalization diagnoses during all available period before the index-date)].*

PROPENSITY SCORE MATCHING (PSM): the cohorts were matched to balance possible confounding variables. *[the following variables were considered for PSM matching: age, sex, comorbidities (chronic obstructive pulmonary disease, psychiatric disease, co-treatments (such as antiinflammatory drugs, antidepressants), and CV risk (very high risk, high risk, moderate risk)].*

RESULTS

DESCRIPTION OF STUDY POPULATION

Before PSM*,** the FC and SPC groups consisted of 7,309 and 25,886 patients. Patients in FC group were significantly older (65.7±11.0 vs 65.4±11.0 years, p<0.05***), with higher male frequency (***58.6% vs 56.0%, p<0.001***) and more often had very high cardiovascular risk (***36.1% vs 32.2%***).

After PSM-balance using a 1:3 ratio, the analysis focused on 7,309 FC and 21,927 SPC-treated patients with comparable mean age, gender distribution (65.7±11 years, 58.6% males), proportion of concomitant diseases/medications and CV risk (**Table 1**). A **higher** percentage of patients were **adherent** [i.e those with proportion of days covered (PDC) >75%, during 12 months after index date] **to SPC vs FC** (56.8% vs 44.5%, p<0.001).

RESULTS

Table 1. Baseline characteristics and adherence to medication of FC and SPC cohorts, after PSM

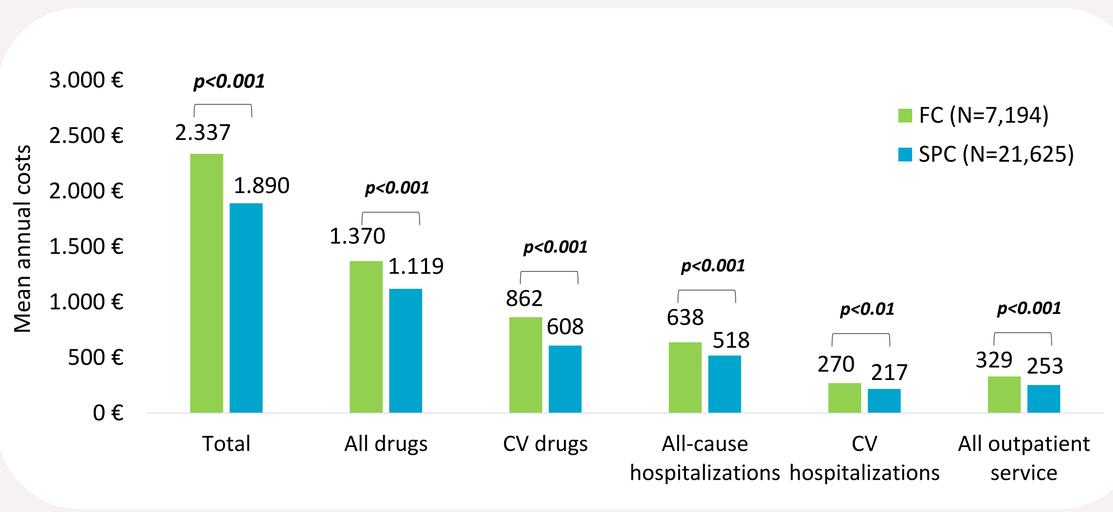
	FC cohort (N=7,309)	SPC cohort (N=21,927)	P-value
Baseline characteristics			
Age, mean (SD)	65.7 (11.0)	65.7 (10.9)	0.836
Male, n (%)	4,280 (58.6)	12,852 (58.6)	0.934
COPD, N (%)	2,250 (30.8)	6,701(30.6)	0.720
Psychiatric disease, N (%)	168 (2.3)	525 (2.4)	0.641
Antiinflammatory treatment, N (%)	3,903 (53.4)	11,738 (53.5)	0.844
Antidepressants, N (%)	1,196 (16.4)	3,531 (16.1)	0.601
Cardiovascular Risk			0.556
Very High risk, N (%)	2,640 (36.1)	7,831 (35.7)	
High risk, N (%)	3,633 (49.7)	10,880 (49.6)	
Moderate/low risk, N (%)	1,036 (14.2)	3,216 (14.7)	
% Adherence* to medication *(PDC>75%)*	**44.5%**	**56.8%**	**<0.001**

* **Adherence** to FC or SPC was evaluated as the proportion of days covered (PDC), during 12 months after index date (***PDC>75% adherence***).

COST ANALYSIS

As shown in **Figure 1**, total annual healthcare costs per patient per year were **significantly higher in FC compared to SPC cohort** (2,337€ vs 1,890€, p<0.001). Expenses related to **all medications** (1,370€ vs 1,119€, p<0.001) and **CV drugs** (862€ vs 608€, p<0.001) were the most impactful cost items, distantly followed by CV-related hospitalizations (270€ vs 217€, p<0.01) and outpatient specialist services (329€ vs 253€, p<0.001).

Figure 1. Annual healthcare costs per patient per year, in FC vs SPC cohort, during first year of follow-up



PREDICTORS OF COST INCREASE: Generalized Linear Model regression analysis showed that among baseline variables, the significant (p<0.001) predictors of increased annual healthcare costs were older age (+21€), male gender (+220€), diagnosis of chronic obstructive pulmonary disease (COPD) (+358€), very high CV risk (+834€), FC combination (+481€) and treatment adherence (+318€, potentially due to the relatively short (1-year) follow up, during which drug costs prevailed over eventual cost reduction due to reduction in CV events).

References

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CONCLUSIONS

This ***real-world analysis*** in Italian patients with hypercholesterolemia showed that lipid-lowering therapy with ROS/EZE as SPC versus FC is associated with cost savings for the national health system.