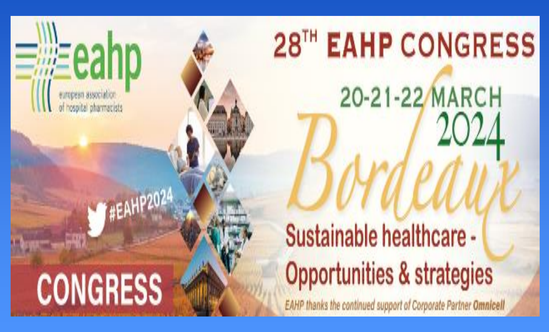
ADHERENCE TO GUIDELINES AND PRESCRIBING TRENDS OF STATINS IN PATIENTS WITH ACUTE CORONARY SYNDROME



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Background

Early use of statins in patients with Acute Coronary Syndrome (ACS) was associated with a reduced in-hospital mortality rate. Furthermore, there is evidence that apart from LDL-C lowering, statin therapy provides other clinical benefits, referred as pleiotropic effects, which can be beneficial early after an ACS, including enhancement of plaque stabilization, improvement of endothelial function, anti-inflammatory effects and decreased thrombogenicity. Despite this, epidemiological studies in USA suggest that a large proportion of patients with ACS did not receive high intensity statins (regimens that reduce LDL-C by ≥50%).

Purpose

The goal of the current study was to evaluate the prescribing trends in high intensity statin treatment early in the post-ACS course in hospitalized patients in Greece.

Material and Methods

We conducted a multicenter retrospective study of patients who had experienced an ACS event during the period between January 2012 and December 2016 from four hospitals in Greece. The International Statistical Classification of Diseases and Related Health Problems - Tenth Revision - Clinical Modification (ICD-10-CM) was used to identify ACS events in the electronic inpatient medical records. The patients were included in the study based on the following criteria: 1) admission ICD-10 codes for ACS, 2) adults aged 18 years or older, 3) availability of electronic inpatient records. Pregnant or lactating female patients were excluded from the study.
Prescription fills for four types of statins (atorvastatin, rosuvastatin, simvastatin and pravastatin) as well as the ezetimibe - simvastatin combination were identified using electronic pharmacy records. High-intensity statin therapy regimens included prescription fills for rosuvastatin 20-40 mg, or atorvastatin 40-80 mg. All other statin prescription fills were considered to be low or moderate-intensity statin therapy regimens.

Results

There were 2.708 patients (with an average age 66 years) who met the inclusion criteria of the present study. Study sample included 2.051 (75.7%) men. Mean (SD) hospitalization time was 6.65 days.
535 patients (19.8%) did not receive statins during acute hospitalization. Atorvastatin was the most common prescribed statin (50.4%) followed by rosuvastatin (18.0%), simvastatin (10.4%) and pravastatin (0.5%). The combination of simvastatin-ezetimibe was prescribed in 1.0% of the study sample. Only, 41.8% of the patients were prescribed a high-intensity statin (**Table 1**). Out of the high-intensity regimens, atorvastatin 40 mg was the most common regimen prescribed followed by rosuvastatin 20 mg. Among the 2.708 patients of the study sample, 37.3% received a moderate-intensity statin regimen and only 0.2% received a low-intensity statin regimen.

Table 1. Percentage of Patients Filling Prescription for High-Intensity statins after an ACS event*

	Number of Patients (n=2,708)
Any high-intensity statin	1,132 (41.8)
Atorvastatin 40 mg	813 (30.0)
Atorvastatin 80 mg	19 (0.7)
Rosuvastatin 20 mg	249 (9.2)
Rosuvastatin 40 mg	51 (1.9)

** Values are n (%)*

Among the patients ≤75 years of age, 46.9% received high-intensity therapy, 35.6% moderate and 0.2% low-intensity therapy, while for the patients >75 years of age, 29.9% received high-intensity therapy, 41.1% moderate and 0.2% low-intensity therapy (**Table 2**). Statins were not prescribed in 16.1% of patients ≤75 years old and in 28.3% of patients >75 years old.

Table 2. Intensity of statin therapy used in patients ≤75 and >75 years of age*

Intensity of Statin Therapy	Patients ≤75 years of age (n=1,898)	Patients >75 years of age (n=810)
High	890 (46.9)	242 (29.9)
Moderate	676 (35.6)	333 (41.1)
Low	3 (0.2)	2 (0.2)
No statin therapy	306 (16.1)	229 (28.3)
Ezetimibe plus simvastatin	23 (1.2)	4 (0.5)

** Values are n (%)*

Among the patients with LDL-C <100 mg/dl, 40.2% took high-intensity statins while 23.8% took no statins at all (**Table 3**). On the other hand, those patients who had LDL-C ≥100 mg/dl, 47.5% took high-intensity statins and 12.7% took no statins whatsoever.

Table 3. Intensity of statin therapy used in patients with LDL-C <100 mg/dl and LDL-C ≥100 mg/dl *

Intensity of Statin Therapy	LDL-C <100 mg/dl (n=600)	LDL-C ≥100 mg/dl (n=1423)
High	40.2	47.5
Moderate	35.0	38.7
Low	0.0	0.4
No statin therapy	23.8	12.7

*Values are %

In-hospital mortality was 3.2% (86 of 2708 patients) for the total study sample and 1.6% (35 out of 2173 patients) for the patients on statin medication.

Conclusions

The majority of ACS patients in the four Greek Hospitals included in the study did not receive high-intensity statins but the percentage who did receive intensive therapy was higher than have been reported in other similar studies in the USA. Adherence to guideline recommendations for statins should be encouraged within the health system in order to improve the utilization of these lipid-lowering agents and thus reduce the risk of recurrent cardiovascular events in ACS patients.

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