Use of High-Intensity Statin Strategy. Are the Guidelines Followed?

Uso de la estrategia de alta intensidad con estatinas. ¿Se cumplen las pautas establecidas?

YANINA B. CASTILLO COSTA, VÍCTOR M. MAURO, ADRIÁN A. CHARASK, ENRIQUE FAIRMAN, HUGO BUHEZO, CARLOS BARRERO

ABSTRACT

Background: Secondary prevention in patients <76 years with history of a vascular event or previous revascularization includes the use of high intensity-statin therapy.
Objective: The aim of this study was to evaluate the 1-year adherence to treatment since patient discharge from the coronary care unit.
Methods: A prospective study of consecutive patients was conducted between January and November 2015, with a median follow-up of 9 months.
Results: A total of 210 patients were included in the study. Median age was 59 years (52-67.5) and 83% were men. Most patients (74.5%) were discharged with atorvastatin 40 mg/day, 19% with rosuvastatin 20 mg/day, 2.7% with atorvastatin 80 mg/day and 3.9% with rosuvastatin 40 mg/day. Half of the patients continued with high-intensity statins, 28% reduced the dose and 22% stopped the treatment.
Conclusions: Only half of the patients at high vascular risk or history of recent revascularization continues with the treatment after one year.

Key words: Secondary Prevention - Statins - Medication Adherence – Patient Compliance

RESUMEN

Introducción: La prevención secundaria en pacientes menores de 76 años que han padecido un evento vascular o han sido revascularizados incluye el uso de estatinas en altas dosis.
Objetivo: Evaluar la adherencia al año de dicho tratamiento instituido desde el alta de la internación en UCO.
Materiales y métodos: Estudio prospectivo de pacientes consecutivos durante el período enero-noviembre de 2015. Seguimiento (mediana) 9 meses.
Resultados: Doscientos diez pacientes. El 83% eran hombres. La edad (mediana) alcanzó los 59 años (52-67,5). El 74,5% tuvo alta con atorvastatina a 40 mg/día; un 19%, con rosuvastatina a 20 mg/día; un 2,7%, con atorvastatina a 80 mg/día; y un 3,9%, con rosuvastatina a 40 mg/día. Un 50% de los pacientes continuaron tomando estatinas de alta intensidad, 28% redujeron la dosis y 22% abandonaron el tratamiento.
Conclusiones: Solo la mitad de los pacientes con alto riesgo vascular o procedimiento de revascularización reciente mantiene el tratamiento al año.

Palabras clave: Prevención secundaria – Estatinas – Cumplimiento de la Medicación – Cooperación del Paciente

INTRODUCTION

Patients with acute coronary syndrome (ACS) or myocardial revascularization are at risk of new ischemic events; thus, secondary prevention is essential in this population. The 2013 ACC/AHA guideline for the management of cholesterol, (1) produced a radical change in the perception of lipid-lowering treatment in patients at high vascular risk, focusing on statin dose instead of LDL targets. There is evidence that adherence to long-term treatments is higher when therapies have been implemented at the time of hospital discharge. (2) The aim of this study was to evaluate the one-year adherence to high-intensity statin therapy in a population discharged from the coronary care unit with that indication after an ACS or a myocardial revascularization procedure.

METHODS

We conducted an observational and prospective cohort study of patients <76 years admitted to the coronary care unit between January and November 2015 due to an ACS or after a myocardial revascularization procedure [percutaneous coronary intervention (PCI) or coronary artery bypass grafting (CABG)] and who were discharged with precise indication of high-intensity statin therapy as recommended by the 2103 guideline for the management of cholesterol. The patients were followed-up for one year at the outpatient clinic or by

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telephone interview. Data collected included the daily dose of statins, the percentage of patients reducing or discontinuing treatment and the reasons to do so.

Patients >76 years or with contraindications to statins, or functional class II-IV heart failure or requiring dialysis, or those who could not be contacted for follow-up were excluded from the study.

High-intensity statin therapy was defined as the use of atorvastatin 40-80 mg/day or rosuvastatin 20-40 mg/day. Moderate-intensity statin strategy: atorvastatin 10-20 mg; rosuvastatin 10 mg, simvastatin 20-40 mg, pravastatin 40 mg or lovastatin 40 mg.

Statistical analysis

The results are presented as frequency tables. Categorical variables are expressed as percentage and continuous variables as mean and standard deviation (SD) or median and interquartile range (IQR 25-75%).according to their distribution. Continuous variables were compared using Student's t test or the Mann-Whitney U test, as applicable. Discrete variables were compared using the chi-square test with Yates correction or Fisher's exact test, and the chi-square test for trends, as applicable. A two-tailed p value < 0.05 was considered statistically significant. All the calculations were performed using the Epi-Info 7.2 software package (Centers for Disease Control and Prevention, Atlanta).

Ethical considerations

The protocol was evaluated and approved by the institutional Review Board. All the patients gave their consent at the moment of admission to the coronary care unit

RESULTS

A total of 210 patients were included in the study. The characteristics of the study population are described in Table 1. High-intensity statin therapy was indicated in non-ST-segment elevation ACS in 43.4% of the cases, ST-segment elevation ACS in 28.6%, scheduled PCI in 22% and scheduled CABG in 6%.

Atorvastatin 40 mg/day was used in 74.5% of the patients, rosuvastatin 20 mg/day in 19%, atorvastatin 80 mg/day in 2.7% and rosuvastatin 40 mg/day in 3.8%.

At one-year follow-up [median: 9 months (IQR 25-75%: 7-11.5 months)] only 50% (n = 104) of patients continued with high-intensity statin therapy, 28% (n=54) had reduced the dose and 22% (n=40) had discontinued treatment. The reasons for stopping/reducing treatment were medical indication in 53% of cases and patient's choice in 47% (Table 2). In the 43 patients who reduced or stopped the treatment due to their own choice, the information obtained in the web was crucial to base their decision in one third of the cases (Figure 1).

DISCUSSION

Lack of adherence to prescribed treatments is not exclusive of patients with cardiovascular disease; on the contrary, it is a common feature in patients with chronic diseases (3) as hypertension, diabetes, HIV/AIDS, tuberculosis and depression.

The proportion of patient compliance in secondary prevention of cardiovascular disease, is not only low (4) but also decreases over the time: (5) six months after initiating an effective treatment, over 50% of the patients decide to abandon the treatment prescribed or the changes in lifestyle. (6) This situation is due to several reasons: asymptomatic conditions, chronic nature of the disease, patient's personal situation, absence of physician–patient communication, barriers to access medical services or costs. (7, 8) The PURE study (4) analyzed the use of medications according to the income of the countries evaluated and reported significant variations in the percentage of patients receiving proven effective secondary preventive drugs: 66.5% in the richest countries and 3.3% in the poorest. Nevertheless, the economic factor does not seem to be the only reason for receiving inadequate treatment, since different experiences in the United States (9) and Canada (10) showed that even though patients received medication free of charge, the level of adherence at one year was only 55%. In our experience, all the patients had medical coverage and only 50% of them adhered to the high-intensity statin strategy. Recently, Colantonio et al. (11) analyzed the adherence to high-intensity statin therapy in almost 30,000 Medicare beneficiaries aged 66 to 75 years in the United States and showed that 58.9% maintained high adherence to treatment (defined as 80% of days covered)

Table 1. Baseline characteristics (n=210)

	%
Male sex	83
Median age (IQR. 25-75%), years	59 (52-67.5)
Dyslipidemia	49
Diabetes	23
Smoking habits	28
Peripheral vascular disease	41
STEACS	28.6
NSTEACS	43.4
Scheduled PCI	22
Coronary artery bypass grafting	6

STEACS: ST-segment elevation acute coronary syndrome. NSTEACS: Non-ST-segment elevation acute coronary syndrome. PCI: percutaneous coronary intervention

		Dose reduction	Medication discontinuation
Medical indication	(n=43)	55 (90%)	6 (10%)
Patient's choice	(n=61)	9 (21%)	34 (79%)

Table 2. Reasons for reducing/discontinuing high-intensity statin therapy

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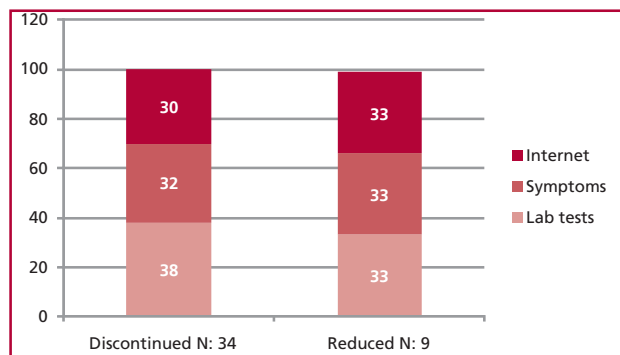
Fig. 1. Causes for patients' personal decision in reducing/discontinuing high-intensity statin therapy (n=43)

at 6 months, which decreased to 41.6% at two years; 8.7% and 13.4% down-titrated while 12.4% and 18.8% discontinued their statin therapy at 6 months and two years, respectively.

Nonadherence to the treatment prescribed is associated with poor quality of life, higher costs of care and long-term mortality. (12) Poor adherence to statins in patients after myocardial infarction is associated with 25% higher risk of mortality compared with their high-adherence counterparts. (13) Therefore, understanding and reverting this situation is of vital importance.

In our study, one out of three patients who stopped or reduced the dose of the medication prescribed by their own choice based their actions on information obtained on the Internet, and this situation was similar to other experiences. (14, 15) Thus, scientific societies and public health care organizations should take a more active role in providing reliable information about diseases and their treatments. This information should be available during medical visits so that patients can clear up doubts about the benefits of initiating and continuing with high-intensity statin therapy. This approach will ensure the proper adherence to the medication prescribed. In this sense, the Argentine Society of Cardiology is a pioneer with Wikicardio, its website focused on the community.

Study limitations
This study was entirely conducted in a private medical institution which provides care for patients with private medical coverage (prepaid or social health insurance) and therefore our reality may differ from that of other socio-economic groups.

CONCLUSIONS
Secondary prevention is suboptimal in patients after an ACS or in those undergoing myocardial revascularization. Only half of these patients continue with the high-intensity statin strategy after one year despite this situation is easy to revert in most cases with adequate information provided to the patient and the

attending physician. By understanding this reality, we will be able to focus on identifying the barriers which cause that only half of the patients are under adequate treatment with statins for secondary prevention and, in turn, correct the shortcomings and significantly improve public health in our environment.

Conflicts of interest
None declared. (See authors' conflicts of interest forms on the website/Supplementary material).

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