Clinical characteristics and genetic predisposition of dyslipidemic patients with statin intolerance

Alessia Cipollone[1], Riccardo Mattia Ricciardi[1], Artenca Shehu[1], Paola Vizzarri[1], Damiano D'Ardes[1], Ilaria Rossi[1], Maria Teresa Guagnano[1], Sante Donato Pierdomenico[2], Marco Bucci[1], Francesco Cipollone[1]

[1] "Clinica Medica" Institute, Department of Medicine and Aging Science, "G. D'Annunzio" University of Chieti-Pescara, Italia
[2] Department of Innovative Technologies in Medicine and Dentistry, "G. D'Annunzio" University of Chieti-Pescara, Italia
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Alessia Cipollone: acipollone@live.it

Background: Statin therapy represents the gold standard in lipid lowering therapy, although it is associated with an increasing rate of therapeutic abandonment especially due to the onset of muscle symptoms (statin associated muscle symptoms SAMS). In literature, a higher incidence of SAMS in the female population has already been documented, probably attributable to differences in pharmacokinetics and pharmacodynamics between genders. A relevant element in this condition would seem to reside in the SLCO1B1 gene, responsible for the tissue transport of statins, whose mutation would determine an increased plasma concentration of the same with consequent development of SAMS.
Aim: The aim of our study was to evaluate the real-life prevalence of statin intolerance in patients referred at our Center and how this determines whether or not the 2019 ESC guideline's LDL target was reached. The influence of genetic factors (specifically the SLCO1B1 mutation) and of patients' general and clinical characteristics (gender, age, BMI) on the achievement of the target was also analyzed.
Methods: We selected a population of 185 patients attending our Center and enrolled in the LIPIGEN project (96 F; 89 M), of whom 131 FH+ (67 F; 64 M). In 97% of the total population it was possible to evaluate the SLCO1B1 gene, which was found to be mutated in 67 out of 179 patients (37 F; 30 M). The mean age of our patients was 35 years (18 to 74 years; 41 f, 30 m), the mean BMI was 24.2 (23.9 f; 24.5 m).
Discussion: In accordance with the literature, our data showed a greater statin intolerance in female (58% f vs 42% m). In particular, Atorvastatin was the worst tolerated, with predominantly SAMS development even in the absence of CPK elevation (only 2 patients). If intolerance was referred by the patient, we preferred to shift to Rosuvastatin, generally characterized by better tolerability.
Intolerance showed a continuous growth trend in relation to age in both sexes, more significant in female (5-fold increase from 35 to 75 years).
The evaluation of the BMI was affected by the different numerical representation between classes, given the prevalence of normal weight and overweight population. From our preliminary data, the BMI would seem to be directly correlated with the development of statin intolerance; less significant the correlation with the achievement of the target since the poor representation of some groups could determine confounding results.
Of the 179 patients analyzed for mutations of the SLCO1B1 gene, 37% presented its mutation. By stratifying the data based on sex, the influence of this mutation on the development of statin intolerance in female was confirmed, independently of the diagnosis of familial hypercholesterolemia, particularly in female FH+.
Conclusions: Statin intolerance still represents an obstacle to therapeutic compliance and the achievement of the LDL target. Particular importance seems to be related to age and the presence of SLCO1B1 mutations; the role of BMI/waist circumference is still uncertain.

Short-term cognitive and functional decline in older patients undergoing elective cardiac surgery: preliminary results of a longitudinal study

Eleonora Cucini[1], Alberto Finazzi[1], Chukwuma Okoye[1,2], Emma Esposito[1], Serena Bertocchi[1], Roberta Rendina[1], Alice Riccò[1], Armida Soccali[1], Chiara Riva[1], Elisabetta Mangili[1], Lavinia Vitali[1], Giovanni Marchetto[1,2], Adriana Antonella Bruni[2], Giuseppe Bellelli[1,2]

[1] University of Milan-Bicocca, Monza, Italy
[2] IRCCS San Gerardo of Tintori Foundation, Monza, Italy
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Eleonora Cucini: e.cucini1@campus.unimib.it

Aim: The implementation of new techniques has significantly reduced mortality and morbidity in older cardiovascular patients undergoing cardiac surgery. However, few studies have assessed post-surgery functional and cognitive outcomes in this demographic. This study aims to characterize baseline cognitive and functional status of patients undergoing elective cardiothoracic surgery (CS) and to evaluate their modifications over a 3-month follow-up.
Methods: Data were extracted from a prospective study starting May 2023. Patients aged 65+ undergoing elective CS received pre-operative geriatric assessments. Postoperative complications and delirium were monitored, with a 3-month follow-up assessing functional and cognitive status. Kruskal-Wallis and Fisher's tests analyzed clinical and demographic features, and linear regression examined the relationship between follow-up functional autonomy and preoperative cognitive status.
Results: Seventy-seven patients (median age: 72 [IQR, 68.00-75.25], 53% males) were included in the study, showing a median Instrumental Activities of Daily Living (IADL) of 8 [5.00-8.00]. The median pre-operative Montreal Cognitive Assessment (MoCA) was 22.88 [19.96-24.80]. 21.4% of patients with impaired cognitive performance at baseline experienced delirium, compared to 2.3% of those without impairment (p=0.052). At follow-up, 58 patients were re-assessed, showing a median IADL of 7.5 [5.00, 8.00] and an almost 64.3% prevalence of impaired cognitive performance on Telephone MoCA testing. At the linear regression analysis, pre-operative MoCA was correlated with three-month IADL decline [β = 0.144; 95% CI 0.044-0.243; p=0.005].
Conclusions: Routine cognitive assessments reveal significant cognitive deficits in older CS patients. Preliminary findings suggest a link between preoperative cognitive impairment and functional decline.