76 | Optimizing lipid-lowering therapy in coronary heart disease: Patterns of statin adherence

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Introduction

Coronary heart disease (CHD) is a leading cause of death, worsened by comorbidities. Secondary prevention relies on statins, which reduce recurrent events, but adherence is often low. This study explored factors affecting adherence to lipid-lowering therapy in CHD patients with comorbidities, focusing on differences between men and women.

Methods

This retrospective observational study was conducted between September 2024 and May 2025 and included 145 patients with CHD who had experienced a cardiovascular event within 1 to 2 years prior to enrolment. Inclusion criteria: confirmed CHD (100% of participants), with or without comorbidities such as type 2 diabetes mellitus, metabolic syndrome, dyslipidaemia, atrial fibrillation and chronic heart failure. Exclusion criteria: oncological or rheumatological diseases, or myocardial infarction occurring more than 2 years before enrolment. Adherence to statin therapy was measured using the standardized MARS-5 scale and categorized as follows:

–high adherence – regular intake with no missed doses;

–moderate adherence – occasional missed doses (≤1 per week);

–low adherence – frequent missed doses (≥2 per week).

Therapy intensity classification:

High-intensity therapy: atorvastatin 40–80 mg, rosuvastatin 20–40 mg, or combination therapy with ezetimibe 10 mg;

Moderate-intensity therapy: statin doses below the above thresholds, in accordance with ESC guidelines [1] and NICE recommendations [2].

Patients were stratified by gender (121 men, 24 women). Due to subgroup imbalance, Pearson's χ^2 test with likelihood ratio correction was applied. Additional analyses included descriptive statistics, Cramer's V for effect size, Somers' d for ordinal association, Gamma coefficient, Spearman's rho and Pearson's correlation. Data management and visualization were performed using Microsoft Excel. Statistical analyses were conducted with STATISTICA 13.

Data management and visualization were performed in Microsoft Excel. Statistical analysis was carried out using STATISTICA 13. The study complied with the principles of the Declaration of Helsinki and the International Ethical Guidelines for Biomedical Research Involving Human Subjects (2016).

Results

A statistically significant association was found between gender and adherence to statin therapy: $\chi^2(2) = 26.518$, $p < .001$; Cramer's $V = 0.428$ (moderate effect size). Men demonstrated significantly higher adherence (84.3%) compared with women (66.6%). Significant associations were also observed between adherence and therapy intensity or dose adjustment: $\chi^2(4) = 72.131$, $p < .001$; likelihood ratio $\chi^2(4) = 43.975$, $p < .001$; linear-by-linear association test $\chi^2(1) = 34.481$, $p < .001$. The following measures confirmed statistically significant negative correlations between adherence and statin dose modifications: Somers' d (symmetrical) $= -0.297$, $p = .005$. Gamma $= -0.579$, $p = .005$. Spearman's rho $= -0.313$, $p < .001$. Pearson's $r = -.489$, $p < .001$. φ coefficient $= .705$, $p < .001$, indicating a strong overall association.

Higher adherence (MARS-5) was associated with fewer dose reductions or therapy changes, while lower adherence correlated with more modifications. Men demonstrated significantly better adherence than women. Moderate-intensity statin therapy showed higher adherence than high-intensity regimens. Findings were supported by χ^2, Cramer's V, Somers' d, gamma, Spearman's rho and Pearson's r analyses.

Conclusions

A statistically significant, moderate association was found between gender and adherence to statin therapy in patients with CHD and comorbidities ($\chi^2(2) = 26.518$, $p < .001$; Cramer's $V = 0.428$, $p < .001$). Men demonstrated significantly higher adherence (84.3%) compared with women (66.6%). Patients at high cardiovascular risk showed better adherence when receiving moderate-intensity statin regimens, suggesting that dose optimization may enhance long-term persistence. Negative correlations between adherence and dose adjustments (gamma $= -0.579$; Spearman's rho $= -0.313$; Pearson's $r = -.489$) confirm that unnecessary dose modifications may undermine adherence. Gender-sensitive strategies and patient-centred approaches, including education on cardiovascular risk and the long-term benefits of statin therapy, are needed to improve secondary prevention outcomes in CHD.

References

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