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Evaluating the Efficacy of High-Intensity Statin Therapy in Reducing Inflammatory Markers among Post-Myocardial Infarction Patients in Egypt

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Statement: Cardiovascular disease remains the leading cause of death in Egypt. While statins are well-established for lipid-lowering, recent interest has emerged in their anti-inflammatory properties, particularly in post-myocardial infarction (MI) patients. This study aimed to evaluate the effect of high-intensity statin therapy on inflammatory markers, specifically high-sensitivity C-reactive protein (hs-CRP), in Egyptian patients following acute MI.

Methodology: A prospective, controlled study was conducted at Ain Shams University Hospitals in Cairo between February 2023 and February 2024. A total of 120 post-MI patients were enrolled and divided into two groups: Group A (n=60) received atorvastatin 80 mg daily, and Group B (n=60) received simvastatin 40 mg daily. hs-CRP levels were measured at baseline, and then again at 4 weeks and 12 weeks post-therapy using an ELISA-based method. Patients were followed for recurrence of symptoms or major adverse cardiovascular events (MACE).

Results: Baseline hs-CRP levels were comparable between groups ($p > 0.05$). After 12 weeks, Group A demonstrated a significantly greater reduction in hs-CRP levels (from 5.6 ± 1.2 mg/L to 2.1 ± 0.7 mg/L) compared to Group B (from 5.4 ± 1.3 mg/L to 3.4 ± 0.9 mg/L), with $p < 0.001$. Additionally, MACE occurrence was lower in Group A (6.7%) versus Group B (13.3%), though not statistically significant ($p = 0.2$).

Conclusion: High-intensity atorvastatin therapy significantly reduces systemic inflammation as indicated by hs-CRP in post-MI patients in Egypt. These findings support the broader implementation of high-dose statins in post-MI management for secondary prevention beyond lipid-lowering.