

Impact of lipophilic vs hydrophilic statins on the clinical outcome and biomarkers of remodelling in heart failure patients: A prospective comparative randomized study

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Abstract

Aims: There are insufficient direct comparative studies addressing the impact of the type of statin on their respective efficacy in heart failure (HF). The aim of the current

study was to compare the effects of lipophilic (atorvastatin) vs hydrophilic (rosuvastatin) on left ventricular function, inflammatory and fibrosis biomarkers in patients with chronic HF.

Methods: This was a prospective, randomized, comparative, parallel study. A total of

85 patients with chronic HF optimized on guideline directed therapy were randomized to receive either atorvastatin 40 mg (n = 42) or rosuvastatin 20 mg (n = 43) for

6 months. Baseline and follow-up assessment included 2D echocardiography, measurement of N-terminal pro-brain natriuretic peptide, interleukin-6 and soluble suppression of tumorigenicity 2 (sST2) levels, liver enzymes and lipid profile.

Results: The increase in left ventricular ejection fraction was significantly higher in the atorvastatin group compared to the rosuvastatin group (6.5% [3611] vs 4% [265],

P = .006). The reduction in left ventricular end diastolic and end systolic volume was

comparable between the 2 groups. The decrease in sST2 levels in pg/mL was significantly higher in the atorvastatin compared to the rosuvastatin group * 255"] 383 to

109.8 vs "151"] 216 to 69], P = .003). There was a significant reduction in Nterminal pro-brain natriuretic peptide and interleukin-6 levels in both groups, yet the

reduction was comparable in both groups.

Conclusion: The study results suggest that lipophilic atorvastatin is superior to hydrophilic rosuvastatin in increasing left ventricular ejection fraction and reducing fibrosis

marker sST2 in HF patients.

Trial registration ID: NCT03255044, registered on 21 August 2017.

KEYWORDS

heart failure, hydrophilic, lipophilic, remodelling, soluble ST2, statin

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