Background: The antianginal and anti-ischemic efficacy of heart rate (HR) reduction with the selective If inhibitor ivabradine is well established in patients with stable angina in monotherapy as well as in combination with other antianginal agents, including β-blocker.

Aim. To compare anti-ischemic efficacy of combination of ivabradine with bisoprolol versus uptitration of bisoprolol in stable CAD patients with moderate LV systolic dysfunction.

Methods: This randomized single-blind, parallel-group study included 29 patients in sinus rhythm >60 bpm with chronic stable angina (CCS class I-II) with documented MI >3 months, and moderate LV dysfunction (ejection fraction of 39%), treated with bisoprolol 5 mg od. In addition, group 1 (n=17) also received ivabradine (5 mg bid uptitrated to 7.5 mg bid), while group 2 (n=12) were uptitrated to bisoprolol 10 mg od. All patients underwent clinical examination, echocardiography, treadmill exercise (Bruce protocol) after discontinuation of bisoprolol (24 h) and ivabradine (12 h), and a 6-min walking test at baseline and after 2 months.

Results: After 2 months, resting HR was reduced in both groups, from 76.6±4.6 to 59.3±2.5 bpm (P<0.001) in group 1, and from 75.9±3.0 to 60.5±2.3 bpm (P=0.002) in group 2. More patients in group 1 moved to angina class I (82% vs 53% at baseline) than in group 2 (67% vs 58%) (P=0.037). In group 1, 6-min walking distance improved from 388±76 to 446±55 m (P<0.001) and exercise tolerance from 5.9±1.6 to 7.0±1.4 MET (P=0.004), while neither parameter changed in group 2 (400±84 to 386±69 m and 6.2 ±1.4 to 5.7±1.4 MET, both NS). Conclusions: In patients with stable angina and moderate LV dysfunction addition of ivabradine to bisoprolol, but not uptitration of bisoprolol, produces additional anti-ischemic effect.