The Effect of Atherothrombotic Markers in Newly Diagnosed Patients with Type 2 Diabetes Mellitus

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ABSTRACT

Objective: This study aimed to evaluate the effect of adding vildagliptin to metformin therapy on major CV risk parameters in newly diagnosed patients with type 2 diabetes mellitus (T2DM).

Methods: Forty three eligible patients were prospectively randomized to receive combined vildagliptin/metformin therapy or metformin alone. Anthropometric measurements, blood pressure (BP), glycated hemoglobin (HbA1c), lipid profile, plasminogen activator inhibitor-1 (PAI-1), high sensitivity C-reactive protein (hs-CRP), and total antioxidant capacity (TAC) were assessed at baseline and after 12 weeks.

Results: Forty patients completed the study (20 in each group). At baseline, no significant differences were observed between groups in all studied parameters. After 12 weeks, combined vildagliptin/metformin showed significant reductions in HbA1c (Δ change: -2.68 ± 2.24 versus -1.37 ± 1.8%, P = 0.043, respectively), systolic BP (Δ change: -12.5 ± 13.03 versus -3.75 ± 11.57 mmHg, p= 0.012, respectively), diastolic BP (Δ change: -10.25 ± 9.39 versus -2.5 ± 9.39 mmHg, p= 0.009, respectively), triglycerides (Δ change: -9.7 ± 18.48 versus 10.35 ± 27.36 mg/dl, p= 0.037, respectively), and PAI-1(Δ change: -7.93 ± 17.11 versus 3.9 ± 19.39 ng/ml, p= 0.048, respectively) as compared to metformin monotherapy. No significant differences were observed between both groups regarding their effects on other studied parameters.

Conclusion: Adding vildagliptin to metformin resulted in a decrease in PAI-1, systolic and diastolic BP, TGs, and HbA1c with no significant changes in hs-CRP, TAC, and other lipid markers.

Keywords: Vildagliptin; Metformin; Cardiovascular risk; Type 2 diabetes mellitus.

Abbreviations: BMI: body mass index; ACE: angiotensin converting enzyme; ARBs: angiotensin receptor blockers; CCBs: calcium channel blockers. HbA1c: glycated hemoglobin A1c; hs-CRP: high-sensitivity C-reactive protein; TC: total cholesterol; TGs: triglycerides; HDL-C: high-density lipoprotein cholesterol; LDL-C: low-density lipoprotein cholesterol; PAI-1: plasminogen activator inhibitor-1; TAC: total antioxidant capacity; SBP: systolic blood pressure; DBP: diastolic blood pressure.

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