Original Article

Comparison of adjunctive therapy with metformin and acarbose in patients with Type-1 diabetes mellitus

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ABSTRACT

Objective: All the aforementioned data have stimulated interest in studying other potential therapies for T1DM including noninsulin pharmacological therapies. The present study attempts to investigate the effect of adjunctive therapy with metformin and acarbose in patients with Type-1 diabetes mellitus.

Method: In a single-center, placebo-controlled study (IRCT201102165844N1) we compared the results of two clinical trials conducted in two different time periods on 40 patients with Type-1 diabetes mellitus. In the first section, metformin was given to the subjects.After six months, metformin was replaced with acarbose in the therapeutic regimen. In both studies, subjects were checked for their BMI, FBS, HbA1C, TGs, Cholesterol, LDL, HDL, 2hpp, unit of NPH and regular insulin variations.

Results: Placebo-controlled evaluation of selected factors has showna significant decrease in FBS and TG levels in the metformin group during follow up but acarbose group has shown substantial influence on two hour post prandial (2hpp) and regular insulin intake decline.Moreover, Comparison differences after intervention between two test groups has shown that metformin has had superior impact on FBS and HbA1C decline in patients. Nonetheless, acarbose treatment had noteworthy influence on 2hpp, TGs, Cholesterol, LDL, and regular insulin intake control.

Conclusion: The results of this experiment demonstrate that the addition of acarbose or metformin to patients with Type-1 diabetes mellitus who are controlled with insulin is commonly well tolerated and help to improve metabolic control in patients.

KEYWORDS: Acarbose, Metformin, Type-1 diabetes mellitus.

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INTRODUCTION

Type-1 diabetes mellitus (T1DM), is a complex chronic condition[1-3] that results from autoimmune-mediated beta cell destruction and leads to an absolute insulin deficiency.[4] Insulin is the core treatment of T1DM. Achieving stable blood glucose levels and adequate hemoglobin A1c (HbA1c)and preventing the development of micro vascular and macro vascular complications are the main goals of treatment in T1DM.[5,6] The Diabetes Control and Complications Trial has shown that intensive insulin regimens to reduce glucose to near-normal levels are associated with delays in incidence and progression of diabetes-related complications.[3,4,7]

Although beneficial, insulin therapy has some shortcomings. Insulin resistance may develop in some patients. Intensive insulin therapy is also