

A Time to Revisit two old prandial anti-diabetic agents: Acarbose and Repaglinide

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Abstract:

Background: Acarbose and repaglinide are two old prandial anti-diabetic agents. Compared to newer peers, their unique properties are being globally available in generic versions, being oral, and being the cheapest of all. So far, there is little data regarding their comparative efficacy when used alone or in combination.

Methods: In a double blind clinical trial, 358 newly-diagnosed type 2 diabetic patients, who on a combined therapy with metformin and insulin glargine had a FPG of <7.2 mmol/L (<130 mg/dL) but a 2-h PPG >10 mmol/L (>180 mg/mL), were randomly assigned to 3 groups of additional treatment with either acarbose, repaglinide, or acarbose-plus-repaglinide for four months.

Results: Treatment adherence rate was 61.4% for acarbose, 75.6% for repaglinide and 81.3% for acarbose-plus-repaglinide ($p=.001$). And 77% of acarbose group, 83% of repaglinide group, and 90.8% of acarbose-plus-repaglinide group, reached the glycemic target ($p=.04$). Four of acarbose group, 19 of repaglinide patients, and 9 of acarbose-plus-repaglinide patients reported at least one episode of minor hypoglycemia ($p<.005$). HbA1C, & basal insulin requirement decreased most significantly with repaglinide ($p=0.004$ & $p=0.0002$, respectively). Weight increased with repaglinide and decreased with acarbose and remained almost unchanged with acarbose-plus-repaglinide ($p=0.05$). There were no significant changes in LDL levels between the groups ($p=0.06$), but triglycerides (TG) decreased more significantly in acarbose group ($p=0.005$)

Conclusions: both agents are highly effective in lowering postprandial hyperglycemia of newly-diagnosed T2D. When combined, they are more efficacious and diabetes has a better outcome. Compared with newer peers, these 2 are particularly useful where and when cost consideration in diabetes treatment is a prime concern.