Efficacy and safety profile evaluation of acarbose alone and in association with other antidiabetic drugs: a systematic review.


Source
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Abstract

BACKGROUND:
Epidemiologic studies have revealed that postprandial hyperglycemia significantly contributes to high glycated hemoglobin concentrations and could be linked to the development of chronic diabetic complications.

OBJECTIVE:
The purpose of our review was to evaluate the clinical efficacy and safety profile of treatment with acarbose alone and combined with other antidiabetic drugs.

METHODS:
A systematic search strategy was developed to identify randomized controlled trials included in MEDLINE and the Cochrane Register of Controlled Trials. The terms acarbose, α-glucosidase inhibitors, type 2 diabetes, adverse events, combination therapy, and postprandial glucose were incorporated into an electronic search strategy that included the Dickersin filter for randomized controlled trials. To qualify for inclusion, clinical trials had to be randomized trials comparing treatment with acarbose at any dosage with any other antidiabetic drug in patients with type 2 diabetes mellitus or impaired glucose tolerance. Eligible trials had to present results on glycemic control or adverse events. Trial participants needed to be affected by type 2 diabetes mellitus or have impaired glucose tolerance, and the intervention had to include acarbose at any dosage as monotherapy or combined with other antidiabetic drugs. A validated 3-item scale was used to evaluate the overall reporting quality of the trials selected for inclusion in the present review. Nineteen trials were included.
RESULTS:

Treatment with acarbose significantly reduced glycated hemoglobin levels when given as monotherapy and as an add-on to other antidiabetic drug treatment (P < 0.0001). Acarbose treatment was effective in patients with uncontrolled type 2 diabetes and in patients with apparently good metabolic control owing to its positive effect on postprandial hyperglycemia (P < 0.0001). Treatment with acarbose seemed to improve the lipid profile (P < 0.05), reduce circulating levels of cell adhesion molecules (P < 0.05), reduce intima-media thickness progression (P = 0.01), and reverse impaired glucose tolerance to normal glucose tolerance (P < 0.0001).

CONCLUSIONS:

When current therapy is not adequate to obtain glycemic control, acarbose could be an option as monotherapy and as an add-on to other antidiabetic drug treatment, especially when postprandial hyperglycemia is the main concern. Long-term studies are needed to determine whether the effects observed with acarbose use are maintained over the years.

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