Acarbose for the prevention of diabetes

(AUGUST 2003)

TO THE EDITOR: In the August issue of the *Cleveland Clinic Journal of Medicine*,[1] Dr. Siraj discussed the possible role of using metformin or acarbose to induce weight loss in diabetic and nondiabetic patients. He also mentioned in the article that metformin lowered the risk of development of diabetes by 31% in the Diabetes Prevention Program.[2]

Dr. Siraj failed to mention, however, that acarbose has also been demonstrated to prevent diabetes in a group of patients with impaired glucose tolerance. In the STOP-NIDDM trial,[3] use of acarbose (mean daily dose of 194 mg) delayed the development of type 2 diabetes by 25% compared with placebo. There was mild weight loss documented in the treatment group compared with placebo treatment. After adjustment for weight loss, there remained a statistically significant reduction in risk of diabetes in the patients treated with acarbose.

Based on these additional data, the CME self-test answer provided for question number 3 ("Which has been shown to prevent diabetes if used in prediabetic patients?") on page 735 in the same issue is incorrect. The correct answer should be "C" ("Both of them"), as both acarbose and metformin can prevent development of diabetes.

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REFERENCES

1. **Siraj ES.** Is there a role for metformin or acarbose as a weight-loss agent in the absence of diabetes? Cleve Clin J Med 2003; 70:702–704.
2. **Diabetes Prevention Program Research Group.** Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med 2002; 346:393–403.
3. **Chiasson J-L, Josse RG, Gomis R, Hanefeld M, Karasik A, Laakso M, for the STOP-NIDDM Trial Research Group.** Acarbose for prevention of type 2 diabetes mellitus: the STOP-NIDDM randomized trial. Lancet 2002; 359:2072–2077.

TO THE EDITOR: In the August issue, the correct answer to CME question number 3 is C, both of them. Acarbose has been shown to be effective in prevention of type 2 diabetes in a randomized trial (*Lancet* 2002; 359:2072–2077). Although the excellent article by Dr. Siraj did not mention this trial, both metformin and acarbose have demonstrated some efficacy in prevention of diabetes in those with impaired glucose tolerance or prediabetes.

In the article on hair loss by Drs. Mulinari-Brenner and Bergfeld, an important hormone is referred to by misspelled; the correct spelling is dihydrotestosterone (not dehydrotestosterone, which has a completely different structure).

I very much enjoy the *Journal*. Keep up the great work.

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IN REPLY: I thank Dr. Magill and Dr. Weiss for pointing out that acarbose has been shown recently to prevent the development of diabetes when given to subjects with impaired glucose tolerance. The reason this information and reference were not included in my article or in the accompanying CME self-test was because during the initial drafting of the article the STOP-NIDDM trial had not yet been published.

The STOP-NIDDM trial was a double-blind, placebo-controlled randomized trial, performed in 1,429 subjects with impaired glucose tolerance who were randomized to receive acarbose 100 mg or placebo three times daily. After a mean follow-up of 3.3 years, the study demonstrated that subjects who received acarbose were 25% less likely to develop diabetes than those who received placebo. Mean body weight dropped by 0.5 kg in the acarbose group compared with a mean weight gain of 0.3 kg in the placebo group. This difference in body weight did not achieve statistical significance.

Even though adding this reference to the article would have enriched its content, it would not have affected the main theme of the article, which is that neither metformin nor acarbose produce significant and consistent weight loss in patients without diabetes.

Based on this reference, it is clear that acarbose has been shown to prevent the development of diabetes if used in prediabetic subjects. Therefore, the correct answer to the CME self-test question number 3 should be "C."

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