To the Editor: Goldberg and colleagues found that men with prediabetes treated with metformin for an average duration of 14 years in DPPOS (Diabetes Prevention Program Outcome Study) had lower coronary calcium scores than their placebo group counterparts. According to the authors, this beneficial effect of metformin can be explained by its antiinflammatory and antiatherogenic properties.

A growing body of evidence suggests that metformin induces a marked shift in the intestinal microbiota of subjects with type 2 diabetes mellitus, and that these changes mediate the antidiabetic effect of the drug. In particular, metformin is known to increase the abundance of Akkermansia muciniphila, a commensal, mucin-degrading, anaerobic bacterium whose abundance is positively associated with host glucose homeostasis. Beyond its beneficial impact on glucose metabolism, Akkermansia muciniphila was recently shown to directly ameliorate atherosclerosis by attenuating metabolic endotoxemia and related inflammation through repair of the intestinal barrier.

These data also suggest that the anti-atherogenic effects of metformin observed in the Goldberg study could depend on the increase of Akkermansia muciniphila that occurs after drug intake. Should this hypothesis be confirmed by ad hoc studies, gut microbiota may become a therapeutic target in the management of patients with diabetes mellitus.

DISCLOSURES
None.

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REFERENCES

