RESPONSE TO COMMENT ON HOFER ET AL.

International Comparison of Smoking and Metabolic Control in Patients With Type 1 Diabetes. Diabetes Care 2016;39: e177–e178

Diabetes Care 2017;40:e37 | DOI: 10.2337/dci16-0040

Sabine E. Hofer,[1] Kellee Miller,[2] Julia M. Hermann,[3,4] Daniel J. DeSalvo,[5] Michaela Riedl,[6] Irl B. Hirsch,[7] Wolfram Karges,[8] Roy W. Beck,[2] Reinhard W. Holl,[3,4] and David M. Maahs,[9] for the DPV Initiative and the T1D Exchange Clinic Network

We thank the editors for the opportunity to respond to the comment made by Balkau et al. (1) on our recent article (2).

Balkau et al. (1) were interested in detailed information about HbA_{1c} in the overall group stratified by registry. As stated in the text, HbA_{1c} was similar between the two registries. In the T1D Exchange Registry (TIDX), HbA_{1c} was 8.6% (SE 0.06) in current smokers, 8.0% (0.05) in former smokers, and 7.9% (0.05) in never-smokers ($P < 0.001$). In the Prospective Diabetes Follow-up Registry (DPV), HbA_{1c} was 8.5% (0.07) in current smokers, 8.2% (0.08) in former smokers, and 7.8% (0.06) in never-smokers ($P < 0.001$). The findings by Soulimane et al. (3) in a population without diabetes are of interest to the field as we try to better understand the best markers of glycemia. However, HbA_{1c} is currently the best standardized and internationally comparable measurement of metabolic control in patients with diabetes. Our data describe significant differences in mean HbA_{1c} between current smokers and never-smokers (8.5% and 7.9%, respectively, or a difference of 0.6%) in patients with type 1 diabetes versus a 0.1% difference in subjects who were not treated with glucose-lowering agents, as reported in the meta-analysis by Soulimane et al. (3). Further studies are required to investigate mechanistic explanations of whether this difference is due to nicotine, red blood cell turnover, or other physiological factors or to smoking-associated behavioral influences on metabolic control. The observation of significantly higher HbA_{1c} levels in smokers is itself of concern. Data from a T1DX study investigating whether a racial difference exists in the relationship between continuous glucose monitoring glucose over 3 months and HbA_{1c} were presented at the 2016 American Diabetes Association Scientific Sessions (4).

Funding. This work was supported through the Leona M. and Harry B. Helmsley Charitable Trust and the German BMBF Competence Network Diabetes Mellitus (FKZ 01GI1106), which is integrated into the German Center for Diabetes Research as of January 2015.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

References

1. Balkau B, Soulimane S, Simon D, Herman WH. Comment on Hofer et al. International comparison of smoking and metabolic control in patients with type 1 diabetes. Diabetes Care 2016;39:e177–e178 (Letter). Diabetes Care 2017;40:e36. DOI: 10.2337/dc16-2000
2. Hofer SE, Miller K, Hermann JM, et al.; DPV Initiative; T1D Exchange Clinic Network. International comparison of smoking and metabolic control in patients with type 1 diabetes. Diabetes Care 2016;39:e177–e178
3. Soulimane S, Simon D, Herman WH, et al.; DETECT -2 Study Group; DESIR Study Group. HbA1c, fasting and 2-hour plasma glucose in current-, ex-, and non-smokers: a meta-analysis. Diabetologia 2014;57:30–39
4. Bergenstal RM. Is there a racial difference in the mean continuous glucose monitoring glucose in relation to the HbA1c?—results and implications. Presented at the 76th Annual Meeting of the American Diabetes Association, 10–14 June 2016, New Orleans, Louisiana

[1]*Department of Pediatrics, Medical University of Innsbruck, Innsbruck, Austria*
[2]*Jaeb Center for Health Research, Tampa, FL*
[3]*ZIBMT, Institute of Epidemiology and Medical Biometry, University of Ulm, Ulm, Germany*
[4]*German Center for Diabetes Research, München-Neuherberg, Germany*
[5]*Baylor College of Medicine, Houston, TX*
[6]*Department of Internal Medicine, Medical University of Vienna, Vienna, Austria*
[7]*University of Washington, Seattle, WA*
[8]*Division of Endocrinology and Diabetes, RWTH Aachen University, Aachen, Germany*
[9]*Lucile Packard Children's Hospital, Stanford University School of Medicine, Stanford, CA*

Corresponding author: Sabine E. Hofer, sabine.e.hofer@i-med.ac.at.