
 COMMENTS AND
 RESPONSES

Association of 1,5-Anhydroglucitol and 2-h Postprandial Blood Glucose in Type 2 Diabetic Patients

Response to Schindhelm et al.

We thank Schindhelm et al. (1) for their highly valuable and important comment referring to our study assessing the association of 1,5-anhydroglucitol (1,5-AG) with 2-h postprandial blood glucose (2). We fully agree with these authors on the importance of impaired renal function as a potential factor modifying the association of 1,5-AG and glucose values (1,3). While patients with frank renal failure were excluded from our study, the impact of more moderate changes in renal function on 1,5-AG appears to be less consistent in the literature, with the urinary excretion of 1,5-AG not being universally correlated with the urinary albumin excretion (4). These controversial findings may be at least in part due to different tubular defects in various underlying diseases (4).

Schindhelm et al. correctly noticed that we did not present data on renal function. However, this occurred solely

due to space constraints and we are happy to present additional information here. Noteworthy, there was no change in the levels of plasma creatinine from baseline (median 65 $\mu\text{mol/l}$ [interquartile range 53–77]) to study end (67 $\mu\text{mol/l}$ [54–87]; $P = 0.95$). The median values for urinary albumin excretion were low throughout the study: 2.99 mg/mmol creatinine (interquartile range 1.05–6.89) at baseline and even lower at study end (1.43 mg/mmol [0.69–4.45]; $P = 0.11$). In addition, we have extended the sensitivity analysis by adjusting our model for plasma creatinine levels and urinary albumin excretion and found the pattern of the association between 1,5-AG and 2-h postprandial glucose unchanged. 1,5-AG still best reflected the postprandial glucose values of the two previous weeks. We acknowledge that the correlation between 1,5-AG and 2-h postprandial blood glucose values established in our study was moderate. However, the time pattern of the association was robust, even after adjustment for potential effect modifiers, including creatinine and urinary albumin excretion. Of note, this does not exclude the possibility that other parameters not determined in our study also had an effect.

CHRISTOPH STETTLER, MD^{1,2}

MATTHIAS STAHL, MD³

SABIN ALLEMANN, PHD^{1,2}

PETER DIEM, MD¹

KURT SCHMIDLIN, DMD²

MARCEL ZWAHLEN, PHD²

WALTER RIESEN, PHD⁴

ULRICH KELLER, MD⁵

EMANUEL CHRIST, MD¹

From the ¹Division of Endocrinology, Diabetes and Clinical Nutrition, Inselspital and University of Bern, Bern, Switzerland; the ²Institute of Social and Preventive Medicine, University of Bern, Bern, Switzerland; the ³Department of Internal Medicine, Cantonal Hospital, Olten, Switzerland; the ⁴Institute of Clinical Chemistry, Haematology and Clinical Microbiology & Immunology, Kantonsspital, St. Gallen, Switzerland; and the ⁵Division of Endocrinology, Diabetes and Clinical Nutrition, University Hospital, Basel, Switzerland.

Corresponding author: Christoph Stettler, christoph.stettler@insel.ch.

DOI: 10.2337/dc08-1491

© 2008 by the American Diabetes Association.

Readers may use this article as long as the work is properly cited, the work is educational and not for profit, and the work is not altered. See <http://creativecommons.org/licenses/by-nc-nd/3.0/> for details.

References

- Schindhelm RK, Diamant M, Bilo HJ, Slingerland RJ: Association of 1,5-anhydroglucitol and 2-h postprandial blood glucose in type 2 diabetic patients (Letter). *Diabetes Care* 31:e89, 2008. DOI: 10.2337/dc08-1399
- Stettler C, Stahl M, Allemann S, Diem P, Schmidlin K, Zwaalen M, Riesen W, Keller U, Christ E: Association of 1,5-anhydroglucitol and 2-h postprandial blood glucose in type 2 diabetic patients. *Diabetes Care* 31:1534–1535, 2008
- Yamada H, Hishida A, Kato A, Yoneyama T: 1,5-anhydroglucitol as a marker for the differential diagnosis of acute and chronic renal failure. *Nephron* 73:707–709, 1996
- Yamanouchi T, Kawasaki T, Yoshimura T, Inoue T, Koshibu E, Ogata N, Funato H, Akaoka I, Miyashita H: Relationship between serum 1,5-anhydroglucitol and urinary excretion of N-acetylglucosaminidase and albumin determined at onset of NIDDM with 3-year follow-up. *Diabetes Care* 21:619–624, 1998