



COMMENT ON PANTALONE ET AL.

The Probability of A1C Goal Attainment in Patients With Uncontrolled Type 2 Diabetes in a Large Integrated Delivery System: A Prediction Model. *Diabetes Care* 2020;43:1910–1919

Alice Larroumet, Ninon Foussard, Marie Monlun, Laurence Blanco, Kamel Mohammedi, and Vincent Rigalleau

Diabetes Care 2020;43:e198 | <https://doi.org/10.2337/dc20-1742>

We were interested in the recent article from Pantalone et al. (1), who reported that 23.7% of 6,973 subjects with poorly controlled type 2 diabetes ($HbA_{1c} >9\%$) attained HbA_{1c} below 8% within 1 year, based on the electronic health record at Cleveland Clinic. Although the 6,973 participants represented only 6.7% of the 103,969 encountered patients in the database, their fate is a matter of concern, as high rates of vascular and infectious complications have been related to HbA_{1c} above 9%. The follow-up of HbA_{1c} trajectories has shown that high HbA_{1c} usually remains stable or ascending for years, and long-term frank reductions are uncommon, only occurring for 3–4% of the patients (2). Real improvement of HbA_{1c} has however been reported 3 months after hospitalizing patients with $HbA_{1c} >9\%$ (3), but we do not know whether it may persist in the long term.

A total of 364 subjects were hospitalized in our diabetologic ward for uncontrolled type 2 diabetes ($HbA_{1c} >9\%$: mean \pm SD $10.6 \pm 1.5\%$) from 2009 to 2017. The diagnosis of type 2 diabetes was confirmed on admission, and the intensification of the treatment was planned, using lifestyle modification and all the available pharmacologic treatments as indicated for individual patients: oral anti-diabetes drugs (all, except thiazolidinediones and sodium–glucose cotransporter 2 inhibitors that were not available in France) and injectable drugs such as glucagon-like peptide 1 receptor agonists and

insulin analogs when necessary and accepted by the patient. Capillary glucose levels were monitored before and after meals, and often at night, and doses were adapted twice a day with the active participation of the patient, owing to individual glycemic objectives. Based on the initial educational diagnosis, continuous individual education was performed by the whole team during the hospital stay.

We obtained an HbA_{1c} result 1 year later: $N = 92$, HbA_{1c} $8.4 \pm 1.7\%$ ($P < 0.001$ vs. initial value); 43.0% were below 8%. For 109 subjects, later HbA_{1c} was available 4.9 ± 2.2 years after the hospitalization: $8.6 \pm 1.7\%$ ($P < 0.001$ vs. initial value); 40.4% were below 8%. Accordingly, in the multicentric IDAHO 2 study, Raccach et al. (4) reported that HbA_{1c} decreased from $10.0 \pm 2.2\%$ to 7.8% after 6 months and $7.9 \pm 1.4\%$ 1 year after hospitalization for uncontrolled type 2 diabetes.

Depending on the organization of health systems, the rates of hospitalizations for therapeutic intensification for type 2 diabetes varies among countries. The financial cost of these hospitalizations, and the overbooking of hospitals, have led to reduced rates of hospitalization, but we should keep in mind that the admission in a specialized ward can durably improve the HbA_{1c} in poorly controlled type 2 diabetes. Subjects with diabetes are indeed twice as frequently hospitalized as those without diabetes. Diabetes itself is an important primary reason for these hospitalizations, as it is the 2nd

reason after angina pectoris in men (14.5%) and the first reason in women (12.5%) (5). We hypothesize that some of the 6,973 subjects studied by Pantalone et al. were hospitalized during the year between their two HbA_{1c} determinations. If this was registered in the electronic health record system, it would be interesting to analyze whether these hospitalizations contributed to some subjects' improvement of HbA_{1c} .

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

References

- Pantalone KM, Misra-Hebert AD, Hobbs TM, et al. The probability of A1C goal attainment in patients with uncontrolled type 2 diabetes in a large integrated delivery system: a prediction model. *Diabetes Care* 2020;43:1910–1919
- Luo M, Tan KH, Tan CS, Lim WY, Tai ES, Venkataraman K. Longitudinal trends in HbA_{1c} patterns and association with outcomes: a systematic review. *Diabetes Metab Res Rev* 2018;34:e3015
- Umpierrez GE, Reyes D, Smiley D, et al. Hospital discharge algorithm based on admission HbA_{1c} for the management of patients with type 2 diabetes. *Diabetes Care* 2014;37:2934–2939
- Raccach D, Hanaire-Broutin H, Sert-Langeron C, et al. Insulin initiation in type 2 diabetic patients admitted in hospital in France and follow-up at 1 year. *Diabetes Metab* 2006;32:244–250
- Sajjad MA, Holloway KL, de Abreu LLF, et al. Comparison of incidence, rate and length of all-cause hospital admissions between adults with normoglycaemia, impaired fasting glucose and diabetes: a retrospective cohort study in Geelong, Australia. *BMJ Open* 2018;8:e020346

CHU de Bordeaux, Department of Endocrinology-Diabetology-Nutrition, Bordeaux, France

Corresponding author: Alice Larroumet; alicelarroumet@hotmail.com

© 2020 by the American Diabetes Association. Readers may use this article as long as the work is properly cited, the use is educational and not for profit, and the work is not altered. More information is available at <https://www.diabetesjournals.org/content/license>.