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Time to Reach Target Glycosylated Hemoglobin Is Associated with Long-Term Durable Glycemic Control and Risk of Diabetic Complications in Patients with Newly Diagnosed Type 2 Diabetes Mellitus: A 6-Year Observational Study (*Diabetes Metab J* 2021;45:368-78)

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We appreciate the insightful comments from Professor Jeon on this study [1]. In our study, the prevalence of microvascular complications was higher than that of other studies conducted in South Korea (34% vs. 16.7%) [2]. Essentially, we counted newly developed diabetic complications of individuals 3 months after enrollment. In addition, progression of pre-existing microvascular complications, for example, progression from microalbuminuria to macroalbuminuria, was also counted as an outcome when any microvascular complications were detected at baseline. The detailed definition of microvascular outcomes was presented in the method section. There might be several reasons why our study patients had more complications than previously described. First, microvascular complications and cardiovascular risk factors were screened and assessed at the time of diagnosis of type 2 diabetes mellitus and annually or biannually thereafter in all patients, which may have resulted in a higher detection rate. Second, the mean glycosylated hemoglobin (HbA1c) level of study patients was approximately 9.0%. We assume that diagnosis of diabetes was delayed in the majority of patients. In this study, the mean time to a newly detected diabetic complication was only 53 months (interquartile range, 29 to 82). Lastly, the retention rate of this cohort was high, approximately 74.7% during 6 years, which also contributed to a higher detection rate of outcomes than previous studies.

The optimal glycemic target is set to HbA1c <7.0% in some guidelines [3], whereas it is <6.5% in others [4,5]. When we further analyzed the risk of diabetic complications according to time to achieve HbA1c lower than 6.5% instead of 7.0%, unfortunately we did not find a statistically significant difference between groups. Considering that mean HbA1c was approximately 9.0% at baseline, reaching a goal of <6.5% of HbA1c within 3 months is difficult, which led to a much smaller proportion of patients being classified among the early-achievement group. In addition, early achievement of a target HbA1c under 6.5% might be largely determined by baseline HbA1c, even though adjusting for this confounder. To draw clearer conclusions about this association, a large-scale cohort study is needed.

β-Cell dysfunction is a crucial factor in the development of diabetic complications, as described earlier [6]. When baseline C-peptide level was further adjusted for in the model in Table 2, we found similar results to previous ones. A lower risk of composite diabetic complications (adjusted hazard ratio [HR], 0.48;

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95% confidence interval [CI], 0.24 to 0.97) and microvascular complications (adjusted HR, 0.47; 95% CI, 0.23 to 0.96) was found in the earliest target achievement group (<3 months) compared to late achievement group.

As Lee and Cho [7] also mentioned the importance of early HbA1c target achievement in type 2 diabetes mellitus patients on our study, we believe intensive glycemic control in the early stages of type 2 diabetes mellitus is responsible for the prevention of future diabetic complications beyond long-term glycemic durability. In conclusion, we recommend close attention and intervention in the very early stages of this disease to improve outcomes in newly diagnosed type 2 diabetes mellitus patients.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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