Letter

Predicting non-insulin-dependent state in patients with slowly progressive insulin-dependent (type 1) diabetes mellitus or latent autoimmune diabetes in adults. Reply to Sugiyama K and Saisho Y [letter]

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Received: 4 October 2021 / Accepted: 15 October 2021

Keywords

Adult-onset autoimmune diabetes, Glutamic acid decarboxylase antibody, Latent autoimmune diabetes in adults, Slowly progressive insulin-dependent (type 1) diabetes mellitus

Abbreviations

GADAb	GAD antibody
SPIDDM	Slowly progressive insulin-dependent (type 1) diabetes mellitus

To the Editor: We thank Drs Sugiyama and Saisho for their comments [1] on our recent publication in Diabetologia [2] entitled 'Adult-onset autoimmune diabetes identified by glutamic acid decarboxylase autoantibodies: a retrospective cohort study'. The letter by Sugiyama and Saisho mainly focused on three points: (1) only 345 out of 1015 patients with slowly progressive insulin-dependent (type 1) diabetes mellitus (SPIDDM) were included in the final analysis; (2) the initiation of insulin therapy was determined by attending physicians; and (3) repeated measurements of C-peptide to evaluate insulin secretory capacity would be important in guiding the management of patients with SPIDDM [1].

When we analyse the clinical data of patients with SPIDDM to elucidate factors influencing 'progression to an insulin-dependent state,' we must take into consideration that the initiation of insulin therapy is determined by attending physicians. Indeed, the decision could be affected by clinical data, including low BMI and high levels of HbA_{1c} and GAD antibodies (GADAb), as Sugiyama and Saisho pointed out [1]. In this study, we therefore focused on patients who did not require insulin therapy, rather than those who progressed to an insulin-dependent state [2]. We excluded patients who did not receive insulin therapy but had a mean HbA_{1c} of ≥64 mmol/mol (8.0%) during the last year of the follow-up period because we were unsure whether they were

in a non-insulin-dependent state. Among patients who received insulin therapy after the diagnosis of SPIDDM, we excluded those with a mean HbA_{1c} of <64 mmol/mol (8.0%) at the time of insulin initiation from the study because it is possible that the decision regarding the initiation of insulin therapy was influenced by the fact that these patients were positive for GADAb. Patients who were already treated with insulin when they were first found to be positive for GADAb were also excluded because it was not possible to judge the duration from the diagnosis of SPIDDM to the initiation of insulin therapy. We therefore do not believe that there is a selection bias. Rather, we emphasise that the 345 patients were selected for the analyses to avoid the influence of the decision by attending physicians.

We completely agree with the comments by Sugiyama and Saisho that careful assessment of the progression to an insulin-dependent state is important in patients with SPIDDM [1], for which measuring serum C-peptide levels is an option. However, when we analysed the data, we found that serum C-peptide levels were not always measured in patients with SPIDDM. In addition, some were measured in fasting states, whereas others in postprandial states. Analysis of the C-peptide levels was therefore difficult. This is a limitation of our study as mentioned in the discussion [2].

Funding This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Authors' relationships and activities The authors declare that there are no relationships or activities that might bias or be perceived to bias their work. Department of Endocrinology and Diabetes, Nagoya University Graduate School of Medicine, received research funding from Novo Nordisk outside the submitted work; however, the sponsor had no control over the interpretation, writing or publication of this work.

Contribution statement All authors were responsible for drafting the article and revising it critically for important intellectual content. All authors approved the version to be published.

References

[1] Sugiyama K and Saisho Y. (2021) Predicting non-insulin-dependent state in patients with slowly progressive insulin-dependent (type 1) diabetes mellitus or latent autoimmune diabetes in adults. Diabetologia.

[2] Wada E, Onoue T, Kinoshita T, et al. (2021) Adult-onset autoimmune diabetes identified by glutamic acid decarboxylase autoantibodies: a retrospective cohort study.

Diabetologia. 64: 2183–2192. https://doi.org/10.1007/s00125-021-05516-1