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Efficacy and Safety of Voglibose Plus Metformin in Patients with Type 2 Diabetes Mellitus: A Randomized Controlled Trial (*Diabetes metab J* 2019;43;276-86)

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We appreciate Dr. Seok and Dr. Sohn for their thoughtful comments on our recently published article, "Efficacy and safety of voglibose plus metformin in patients with type 2 diabetes mellitus: a randomized controlled trial" [1]. They pointed out the potential role of fixed dose combination of voglibose and metformin (vogmet) in patients with type 2 diabetes mellitus with higher initial hyperglycemia. Also, this medication would be more efficacious in Korean population consuming carbohydrate-rich diet, considering the mode of action of alpha-glucosidase inhibitor that prohibits the rapid absorption of glucose.

We want to emphasize the data of gastrointestinal adverse events (AEs) and body weight reduction in our study, which was discussed by Dr. Seok and Dr. Sohn. First, we thought that lower dose of metformin might be the contributing factor of lower incidence of gastrointestinal AEs in vogmet (fixed dose combination) group compared with metformin group. However, the mechanism of metformin-associated gastrointestinal AEs has still not been well studied, and it might be related with individual genetic factors [2]. In this study, although we do not know the exact mechanism, voglibose at least did not increase the gastrointestinal AEs when it was used with low dose metformin. Second, a previous meta-analysis study [3] demonstrated body weight reduction effect of alpha-glucosidase inhibitors compared with placebo (weighted mean difference, –1.0 kg; 95% confidence interval, –1.69 to –0.31 kg) in Asian as well as Caucasian. Therefore, some studies showed weight-neutrality or weight-benefit, but this finding is not globally acceptable. In fact, our study showed a much more significant body weight reduction in vogmet group than metformin group (–1.63 kg vs. –0.86 kg, $P<0.05$). Based on our study and others, it will be interesting to select appropriate patients who will benefit in terms of both reducing hyperglycemia and body weight.

We totally agree with their opinion that measuring glucose fluctuation using continuous glucose monitoring system (CGMS) will provide more valuable understanding for our study. Another alpha-glucosidase inhibitor, miglitol has been tested whether it reduced glucose variability in patients with acute coronary syndrome [4]. This study showed that miglitol reduced standard deviation and mean amplitude of glycemic excursion compared with pretreatment. Further study is necessary to test whether vogmet reduces glucose variability in outpatient setting using CGMS, but we can assume that vogmet will have similar benefit as miglitol in glucose variability due to its composition and nature. We also think that it will be necessary to test body composition and other cardiovascular risk factors such as blood pressure, lipid profiles, and insulin resistance, to understand the possible cardiovascular benefits of vogmet in future.

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CONFLICTS OF INTEREST

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

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