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International Diabetes Federation

Letter to the Editor

Plausible role of glycated albumin to predict 'burnt-out diabetes' in peritoneal dialysis patients

To the editor

We read the article by Abe, et al., recently published in ***Diabetes Research and Clinical Practice*** about the rate of 'burnt-out diabetes' phenomenon in diabetes mellitus patients on peritoneal dialysis (PD) [1]. The article attracted us, but we have some concerns and comments.

They concluded that the rate of 'burnt-out diabetes' phenomenon in diabetes patients under PD was significantly decreased upon glycated albumin (GA) being taken into account; the rate based on both glycated hemoglobin (HbA1c) and GA was significantly lower than that based on HbA1c. In their study, the cut-off value of HbA1c level was set at <6% and that of GA level at <16% (upper the limit of GA in the general population).

Some recent studies have indicated that GA is superior to HbA1c as an indicator of glycemic control in diabetes mellitus patients undergoing hemodialysis (HD) [2–4]. Other reports have shown that HbA1c is significantly correlated with the mean glucose levels obtained by continuous glucose monitoring [5], and it is better than GA as an indicator of blood glucose levels in PD patients [6]. These discrepancy may controverse whether GA's suitability in HD patients for the assessment of glycemic control can apply to PD patients. Indeed, HbA1c may underestimate glycemic control when complicated with renal anemia. However, proteinuria and protein loss into the PD fluid may also cause underestimation of GA level in PD patients [7]. Thus, the cut-off values of GA in diabetes mellitus patient on PD may be inappropriate when it was set at the upper the limit of GA in the general population; We previously commented to their paper about the 'burnt-out diabetes' phenomenon in diabetes mellitus patients on HD [8,9]. Abe, et al. had better originally determine cut-off value of GA for the diagnosis of 'burnt-out diabetes' from blood glucose levels equivalent to HbA1c 6%, and reevaluate whether the rate of 'burnt-out diabetes' through GA but not HbA1c and GA may play a potential candidate for 'burnt-out diabetes' indicator.

REFERENCES

[1] Abe M, Hamano T, Hoshino J, Wada A, Nakai S, Masakane I. Rate of the "burnt-out diabetes" phenomenon in patients on peritoneal dialysis. Diabetes Res Clin Pract 2018;143:254–62.
[2] Inaba M, Okuno S, Kumeda Y, Yamada S, Imanishi Y, Tabata T, et al. Glycated albumin is a better glycemic indicator than glycated hemoglobin values in hemodialysis patients with diabetes: effect of anemia and erythropoietin injection. J Am Soc Nephrol 2007;18:896–903.
[3] Peacock TP, Shihabi ZK, Bleyer AJ, Dolbare EL, Byers JR, Knovich MA, et al. Comparison of glycated albumin and hemoglobin A(1c) levels in diabetic subjects on hemodialysis. Kidney Int 2008;73:1062–8.
[4] Yajima T, Yajima K, Hayashi M, Takahashi H, Yasuda K. Serum albumin-adjusted glycated albumin as a better indicator of glycemic control in Type 2 diabetes mellitus patients with short duration of hemodialysis. Diabetes Res Clin Pract 2017;130:148–53.
[5] Lee SY, Chen YC, Tsai IC, Yen CJ, Chueh SN, Chuang HF, et al. Glycosylated hemoglobin and albumin-corrected fructosamine are good indicators for glycemic control in peritoneal dialysis patients. PLoS One 2013;8 e57762.
[6] Watanabe Y, Ohno Y, Inoue T, Takane H, Okada H, Suzuki H. Blood glucose levels in peritoneal dialysis are better reflected by HbA1c than by glycated albumin. Adv Perit Dial 2014;30:75–82.
[7] Coelho S, Rodrigues A. Hemoglobin A1c in patients on peritoneal dialysis: how should we interpret it? Ther Apher Dial 2014;18:375–82.
[8] Abe M, Hamano T, Hoshino J, Wada A, Inaba M, Nakai S, et al. Is there a "burnt-out diabetes" phenomenon in patients on hemodialysis? Diabetes Res Clin Pract 2017;130:211–20.
[9] Yajima T. Is there much discrepancy between glycated hemoglobin and glycated albumin? Diabetes Res Clin Pract 2017;133:20.

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