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available, the percentage of the combined peaks can be reported together (ie, in Figure 1B, A and Athens-Georgia are 98.4%), as recommended by the manufacturer. Alternatively, the valid A2 percentage (after baseline correction) can be subtracted from 100, and the other peaks will be in proportion to the remainder. Therefore, by performing this manual correction step, an accurate A2 value can be reported and confusion with \( \beta \)-thalassemia avoided.

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was 5.5 g/dL (55 g/L; reference range, 13.2-17.1 g/dL [132-171 g/L]), mean corpuscular volume, 75.8 \( \mu \)m\(^3\) (75.8 fL; reference range, 80-100 \( \mu \)m\(^3\) [80-100 fL]), mean corpuscular hemoglobin, 22.5 pg (reference range, 27-33.0 pg), and RDW 1.7%. Hb fractions by high-performance liquid chromatography (HPLC) were as follows: A, 54.9%; F, 0.0%; A2, 1.7%; and Athens-Georgia, 43.4%. The initial CZE electropherogram (Figure 1A) gave the following fractions: A, 59.9%; Athens-Georgia, 37.0%; and A2, 3.1%. After correction of the baseline (Figure 1B), the A2 is 1.6%. This corresponds with the value obtained by HPLC.

When the baseline is corrected in these situations (2 major peaks in adjoining zones), the percentage of both major peaks is combined. If another method of Hb fractionation and quantitation, such as HPLC, is not available, the percentage of the combined peaks can be reported together (ie, in Figure 1B, A and Athens-Georgia are 98.4%), as recommended by the manufacturer. Alternatively, the valid A2 percentage (after baseline correction) can be subtracted from 100, and the other peaks will be in proportion to the remainder. Therefore, by performing this manual correction step, an accurate A2 value can be reported and confusion with \( \beta \)-thalassemia avoided.

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Is There Any Ethnic Difference in the Prevalence of Prediabetes?

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To the Editor

The American Diabetes Association added a new criterion for the diagnosis of prediabetes, including a glycosylated hemoglobin (HbA\(_1c\)) level of 5.7% to 6.4%,\(^1\) and fasting plasma glucose and glycosylated hemoglobin levels have an advantage for predicting diabetes in the future.\(^2\)

I read with interest the article by Bersoux and colleagues\(^3\) reporting that HbA\(_1c\) alone cannot identify patients with prediabetes. According to the definition of prediabetes, the predictive ability of prediabetes by HbA\(_1c\) is suspected to be low. On this point, Heianza et al\(^2\) recently conducted a follow-up study of 6,241 people (4,670 men and 1,571 women), and 2,092 of them were identified as prediabetic. Among the prediabetic patients, 1,270 (60.7%) were identified by impaired fasting glucose (IFG) alone, 412 patients (19.7%) by HbA\(_1c\) alone, and 410 patients (19.6%) by both at baseline study. During a mean 4.7-year follow-up, prediabetes progressed to diabetes in 338 patients. Among them, 292 (86.4%) had been identified as prediabetic at baseline, and the prevalence of prediabetes was categorized as 108 patients (37.0%) identified by IFG alone, 30 (10.3%) by HbA\(_1c\) alone, and 154 (52.7%) by both tests. By Cox regression analysis, multivariate hazard ratios of IFG alone, HbA\(_1c\) alone, and both tests compared with normoglycemia at baseline were 6.12, 6.00, and 31.9, respectively.

I agree that the combination of 2 indicators on prediabetes dramatically improves the predictive ability of diabetes in the near future, partly because fasting plasma glucose and HbA\(_1c\) have different meanings on the occurrence of diabetes mellitus. Although oral glucose tolerance testing conducted by Bersoux et al\(^3\) can be set as the “gold standard” to judge type 2 diabetes, their study was classified as a cross-sectional study, which would have difficulty showing a cause-effect relationship.\(^2\)

Mann et al\(^4\) reported the prevalence of 3 components (IFG alone, HbA\(_1c\) alone, and both factors) in prediabetic patients by using data from the National Health and Nutrition Examination Survey 1999-2006 (n = 7,029; 52% women). Of the patients, 2,590 were identified as prediabetic, and 1,430 patients (55.2%) were identified by IFG alone, 446 (17.2%) by HbA\(_1c\) alone, and 714 (27.6%) by both tests.\(^4\) Soloway\(^5\) also pointed out the similarity of these 2 reports. On this point, Bersoux et al\(^3\) reported the prevalence of increased HbA\(_1c\) levels in the prediabetes population to be 65.3%
In the Japanese National Health and Nutrition Survey, 5,070 samples for HbA1c (from 1,986 men and 3,084 women) and 3,741 samples for plasma glucose (1,528 men and 2,213 women) testing were obtained in 2003. More than 30% were identified as IFG, and 38.9% were identified as increased HbA1c (5.7%-6.4%). Compared with these data, Heianza et al reported a lower prevalence of prediabetic patients examined in a large hospital in Tokyo. The prevalence values of IFG and increased HbA1c in their study were 26.9% (1,680/6,241) and 13.2% (822/6,241), respectively. When data from the National Health and Nutrition Examination Survey were used, the prevalence values for IFG and increased HbA1c were 30.5% (2,144/7,029) and 16.5% (1,160/7,029), respectively.

From the viewpoint of prediabetic prevalence, there is doubt about the representativeness of the risk populations in Japanese inhabitants presented by Heianza et al. I speculate that there are ethnic differences in the prevalence of prediabetes, and specification for the target population should strongly be recommended in epidemiologic studies.

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References