Response to Comment on Li et al. Visual Inspection of Chromatograms Assists Interpretation of HbA1c: A Case Report. Diabetes Care 2018;41:1829-1830

Qianrui Li[1,2], M.B.; Yuling Xiao[3], M.M.; Anoop Dinesh Shah[2,4], MRCP, Ph.D.; Sheyu Li[1,5,*], M.D.

1. Department of Endocrinology and Metabolism, West China Hospital, Sichuan University, Chengdu, China
2. Institute of Health Informatics, University College London, London, United Kingdom
3. Department of Laboratory Medicine, West China Hospital, Sichuan University, Chengdu, China
4. University College London Hospitals NHS Trust, London, United Kingdom
5. Division of Population Health & Genomics, Ninewells Hospital and Medical School, University of Dundee, Dundee, United Kingdom

*Corresponding author: Dr. Sheyu Li, M.D., Department of Endocrinology and Metabolism, West China Hospital, Sichuan University, 37# Guoxue Road, Chengdu, 610041, China. 186 Corridor-M Level 5, Division of Population Health & Genomics, Ninewells Hospital and Medical School, University of Dundee, Dundee, Angus, DD1 9SY, Scotland, United Kingdom. TEL: +86-13194874843; FAX: +86-28-85422982; E-mail: lisheyu@gmail.com.

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We thank Dr. Jie Li and colleagues (1) for their interest in our case report, which emphasized the value of visual inspection of chromatograms in clinical practice to assist interpretation of HbA1c (2).

For consistency and comparability with the first and only available report by Wajcman H, et al in 1992 (3), we presented the identified mutation as c.242T>A, p.Leu81His (rs33936967), without including the translational initiation codon variant sequences numbering. According to the latest nomenclature recommendations of the Human Genome Variation Society (HGVS) in 2007 (4), starting with number 1 at the A of the ATG for nucleotide and at the methionine encoded by translational initiation codon for protein-level amino acid, this variant is nominated as c.245T>A, p.Leu82His, but not c.245T>A, p.Leu81His.

We agree with Dr. Jie Li and colleagues that different assays and different kits of the same assay for HbA1c measurement could have diverse interference with different hemoglobin variants, as summarized by NGSP (5). However, the interference from rare hemoglobin variants should not be the sole criterion to evaluate the clinical value of an assay or a kit and the comparison of different measurement methods is beyond the scope of our case report. In the presence of rare variants, such as the Hb La Roche-sur-Yon variant in our reported patient, the HbA1c assay interference is hardly predictable and a case-by-case interpretation of the results is necessary. If the measured HbA1c level in our case was not beyond the commonly observed range in

clinical practice, this variant and the consequent interference was likely to be neglected. This fact raised our concern on the identification of mildly interfered cases and we hereby demonstrated the effectiveness and feasibility of visual inspection of chromatogram in identifying some potential interferences. Nevertheless, it should be clarified that normal chromatograms do not guarantee the accuracy of HbA1c measurement, while abnormal chromatograms indicate the possibility of interfered measurements, under which circumstances a repeat measurement using a different assay is warranted.

In summary, the diagnosis process of our case suggested the value of visual inspection of HPLC chromatograms in assisting the identification of inaccurate HbA1c measurements that were interfered by hemoglobin variants, with no additional cost. However, our case provided little evidence in the selection of assay or kit for HbA1c measurement.

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Conflict of interest

The authors declare no conflicts of interest.

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