## LETTERS TO Anaemia and type 2 diabetes

DOI: 10.12809/ hkmj134109 To the Editor—The recent publication on anaemia and type 2 diabetes mellitus is very interesting.<sup>1</sup> It was reported that "anaemia is common among Chinese type 2 diabetic patients, particularly those with impaired renal function or established cardiovascular disease."<sup>1</sup> There are some points to be discussed. First, in this work, all data were retrospectively retrieved, and hence might be problematic with respect to standardisation and validity of the laboratory results. Second, the confounding effect of underlying genetic anaemic disease, especially for thalassaemia and haemoglobinopathy, was not well explored. Certainly, there is no doubt that diabetic patients with renal impairment can develop anaemia. However, anaemia in diabetic patients without severe renal impairment should be explored further. In such patients, the possibility that anaemia could be due to haemoglobinopathy could complicate recourse to diabetic biomarkers, especially haemoglobin A1c.<sup>2</sup>

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## References

- 1. Chen CX, Li YC, Chan SL, Chan KH. Anaemia and type 2 diabetes: implications from a retrospectively studied primary care case series. Hong Kong Med J 2013;19:214-21.
- 2. Wiwanitkit V. Problem of using hemoglobin A1C measurement in endemic area of hemoglobinopathy. Prim Care Diabetes 2007;1:173-5. cross ref

## Authors' reply

To the Editor-Thank you for Prof Wiwanitkit's inspiring comments. Regarding the first comment on standardisation and validity of the laboratory results, we agree that the data of this study were reviewed retrospectively. However, for all the recruited diabetic patients referred, laboratory investigations (complete blood count, serum creatinine, blood haemoglobin A1c [HbA1c]) were performed in the same facilities of the Kowloon Central Cluster, Hospital Authority of Hong Kong using the same validation mechanism and standardisation protocols. Therefore, interlaboratory discrepancy, if present, was minimised and extra standardisation and validation of the laboratory results appears unnecessary. For the second comment on the confounding effect of underlying genetic anaemic disease, we agree that thalassaemia and haemoglobinopathy are important aetiologies of anaemia among both diabetic and nondiabetic patients and the accuracy of HbA1c could be undermined in the presence of haemoglobinopathy. In the results dealing with the "pattern of anaemia in anaemic diabetic patients", we found that among the 1441 diabetic patients who were anaemic, more

than half had a normocytic (n=879, 61%) type, whilst fewer were microcytic (n=392, 27%) or macrocytic (n=170, 12%). Among those with microcytic anaemia in whom the iron profile or haemoglobin pattern was checked (n=335), 76 had iron deficiency and 32 (23 females and 9 males) had thalassaemia minor. In addition, among anaemic diabetic patients without chronic kidney disease (CKD) [n=918], 29 were found to have alpha- or beta-thalassaemia trait (3.2%), whereas among those with CKD (n=523), three patients with thalassaemia trait were identified. In view of the potential effect of haemoglobinopathy on inferences from HbA1c results, data from these 32 thalassaemia trait patients were excluded from the data analysis (see Table 3 in the paper).<sup>1</sup>

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## Reference

1. Chen CX, Li YC, Chan SL, Chan KH. Anaemia and type 2 diabetes: implications from a retrospectively studied primary care case series. Hong Kong Med J 2013;19:214-21.