Letters

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Response to Dallosso et al. Self-monitoring of blood glucose versus self-monitoring of urine glucose in adults with newly diagnosed Type 2 diabetes receiving structured education: a cluster randomized controlled trial

Diabet. Med. 32, 1116 (2015)

Dr Dallosso and colleagues are clearly very excited about their recent study claiming that 'this is the first pragmatic trial comparing blood glucose monitoring with urine glucose monitoring within an established and widely available structured education course delivered in a primary care setting' [1].

The bit about a primary care setting is certainly novel [2].

Then, as now, one wonders what a control group with no monitoring would look like after 12 months.

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None.

Competing interests

None declared.

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References

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Fructosamine; is the current interest in alternative glycaemic markers justified?

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The interest in alternative glycaemic markers, such as fructosamine, has been rekindled due to increasing data on their ability to improve diagnosis [1] and predict the onset and complications [2] of diabetes. Further clinical validation of these markers is called for [3], however, the limitations must also be elucidated so that, rather like HbA_{1c}, the non-glycaemic physiological, pathological and analytical variables become well known.

Many of the variables that affect HbA_{1c} appear to similarly affect fructosamine despite the different physiological compartments. The most commonly known non-glycaemic factor affecting fructosamine is albumin [3], although data on this is conflicting. We recently reported a multivariable univariate linear regression model of fructosamine in which the effect of ethnicity (South Asian versus Caucasian), sex, age, presence of chronic kidney disease (CKD), vitamin B12, ferritin, folate, haemoglobin, mean cell volume (MCV), fasting glucose, HbA_{1c}, albumin and C reactive protein (CRP) were examined [4]. The significant effect of albumin levels was confirmed, as were the effects of ethnicity, age, presence of CKD (primarily CKD stage 3 versus CKD < stage 3), vitamin B12, folate, albumin, CRP, fasting glucose levels, HbA_{1c} and haemoglobin. Ferritin, MCV and sex were the only non-significant variables [4].

The large number of significant variables had not been anticipated, included due to their established effect on HbA_{1c}, confirming our current poor grasp of fructosamine metabolism. BMI is also negatively associated with fructosamine in those without diabetes [5] and falls during pregnancy [6], further complicating its interpretation. Thyroid status may affect fructosamine interpretation [3], however, not necessarily independently of deranged glucose and protein metabolism [7].

We, therefore, read with interest the new data, but would urge caution on the widespread adoption of fructosamine until the significance of non-glycaemic variables can be established in the clinical field. In particular, HbA_{1c} remains the biomarker of choice for monitoring glycaemic control in those with CKD [8], whereas fructosamine should be used with caution [4].

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