Reviewer’s report

Title: Effect of Glycemic Control on Soluble RAGE and Oxidative Stress in Type 2 Diabetic Patients

Version: 2 Date: 23 July 2013

Reviewer: Barry Hudson

Reviewer’s report:

The authors have submitted a revised article on the relationship between glycemia and sRAGE levels in type 2 diabetic subjects. The authors made changes to the manuscript, however, major comments were not adequately addressed.

1. As previously mentioned in the current study, the authors find controls (n=20) compared to poorly controlled (n=42), but not well controlled (n=28) diabetic subjects, display differences in sRAGE levels (804, 600, and 634 pg/ml respectively). The authors were requested to perform power analysis as their findings in such small numbers and with the large variability seen in sRAGE levels may be a type II error (false positive). The authors mentioned power analysis was performed:

“the power analysis of sample sizes between the main studied groups (GCD, PCD and control) indicated that the number of patients in these groups was satisfactory (power = 95%).”

What did they have 95% power to detect? What is the effect size (eg. OR) in these calculations? The authors need to provide more information on this.

2. The authors pointed out that there are multiple studies of similar sample numbers for sRAGE. This may be true, but what is currently needed in this field of study, is either larger well-designed cohorts or prospective analysis of sRAGE levels with disease. The current study therefore does not add largely to this, and due to the multiple comparisons the authors performed, may be underpowered to do so. As pointed out given both the low sample number studied here, and the large variability in sRAGE levels even in healthy subjects (Brown et al (Ann Clin Biochem 2008) and Wittwer et al (Anticancer Res 2012)), the current study is most likely underpowered to detect the differences seen here. This needs to be discussed if the authors are not planning to increase their study sample size

3. The authors present univariant analysis of the relationship of sRAGE with diabetes, however, did the authors perform analysis adjusted for various risk factors (age, BMI, gender, eGFR, blood pressure, etc) to assess whether this relationship still exists after correcting for confounding factors? This needs to be shown as there are multiple factors that independently affect sRAGE levels.

Level of interest: An article of limited interest
Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests: No