Reviewer's report

Title: Effects of Aging and Type 2 Diabetes on Resting and Post Occlusive Hyperemia of the Forearm; the Impact of Rosiglitazone

Version: 2 Date: 20 February 2005

Reviewer: Peter Gross

Reviewer's report:

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1) In fig. 3 the designations "2w", "4w" and "3m" are all missing. Therefore fig. 3 is impossible to comprehend for a new student of the manuscript.
2) According to the "methods" the study group consisted of 8 men and 8 women. But in table 1 it is shown that 11 men and 5 women were studied. This is not consistent.
3) I find it impossible to state that "...RSG reversed the effects of diabetes on endothelial function but not age." (p.2). Fig. 3 (if I read this incomplete figure with missing designations correctly) suggests that continuation of RSG beyond 3m might well succeed in bringing the postocclusive flow in diabetic patients to the level of controls.
4) It is doubtful if one can say that "Using linear regression analysis blood flows in patients with diabetes correlated with non-diabetic counterparts who were 23 years older". (p.2). It is not known whether vascular and endothelial functions decline with age in a linear mode. (E.g. when hypertension increases its incidence beyond the age of 60 the mode of decline is likely to change).
5) Neither p.3 nor p.11 and beyond carry a critical comment as to the technique of postocclusive vasodilation and how it relates to endothelial function. The gold-standard in this area is intraarterial infusion of stimuli/blockers of endothelial functions. In this way it is able to distinguish between NO, EDHF, PGI-2, PGE-2, guanylate cyclase etc.. Which of these distinctions can be made by using postocclusive vasodilation?
6) On pages 11 and 12 the changes observed in postocclusive vasodilation are - largely - attributed to NO. There should be a justification for this interpretation; perhaps the authors quote a paper that directly validated such an interpretation in diabetic patients.

Minor comments:

1) The controls "were all physically active...". (p.5) Assuming that most of the diabetics were supposedly much less physically active: doesn't this limit the value of these controls? (Physical activity is well known to have major effects on endothelial function.)
2) According to p.5 fourteen of 16 patients were hypertensive at baseline and RSG lowered blood pressure significantly. Data in the literature shows that hypertension per se impairs endothelial function. It would be contributory to point this out in the discussion.
3) The introduction is not well focused on endothelial function. To my understanding the comments on nervous functions are not helpful because this was not tested herein. - The "Results" are somewhat long (3 pages) and the text repeats mostly what
the diagrams show.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
I have no competing interests.