Reviewer’s report

Title: Effect of long-term of physical exercise on the nitrate/nitrite levels in hypertensive postmenopausal women

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Reviewer: Amos Pines

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This study evaluated hemodynamic and blood chemistry parameters, including nitric/nitrate levels in hypertensive women who started a training program. The main conclusion was that exercise reduced arterial blood pressure and increased nitric/nitrate levels.

My comments:

1. a very small sample size, which precludes significant scientific results.

2. in the Method section, selection of participants, it is not mentioned that women were hypertensive, and that a postmenopausal state was established by the usual criteria.

3. because of the small sample, a change of 2 cm in waist circumference (Table 1) was not significant, although it is definitely substantial. This is similarly true for the reduction in weight and BMI.

4. it is very strange that exercising in about 120 beats per minute (50% of heart rate reserve) was not associated with any change in triglycerides (Table 2), while weight, BP were reduced.

5. the investigators should discuss the following: a) the Griess method is more sensitive to i-NOS, whereas the endothelial function (e-NOS) is better evaluated by measurement of c-GMP. b) diet and any inflammatory state may easily effect blood NO. Was this taken into account by the investigators?

6. page 9, Discussion, second paragraph. The authors should mention that weight may not change in physically active persons while fat is reduced, because of building of muscle mass instead of fat tissue.

7. page 9, Discussion, second paragraph, line 10. It is usually accepted that the increase in BP between premenopause and postmenopause is age-related rather than menopause-related.
8. as the title of the article suggests, the focus of the study is on exercise, hypertension and menopause. There is no discussion on the effects of menopause per se on NO and endothelial function, as well as that of HRT in this respect (see for example Salhorta S, Maturitas Jan 19, 2009, ahead of print). Also, although I guess it will be difficult to get the following article, it may help the discussion in the current study: the control group included 36 postmenopausal, hypertensive women undergoing exercise testing, with measurements of NO (Czarnecka D. Med Sci Monit. 2004 Feb;10(2):CR55-61.

In conclusion, this is a nice, but small-scale study with some innovation. However, the authors must address several methodological problems and revise the Discussion paragraph as suggested before considering its acceptance for publication.