Reviewer's report

**Title:** Use of exercise tests in primary care: importance for referral decisions and possible bias in the decision process; a prospective observational study

**Version:** 3
**Date:** 30 July 2014

**Reviewer:** Stefan Bösner

**Reviewer's report:**

Examining a large patient collective from 28 Swedish primary care clinics, the authors report on the utility of clinical exercise tests for referral decisions and look at possible bias in the decision process. The authors show that positive/inconclusive exercise tests and exertional chest pain predicted referral in men and women and that gender and socioeconomic interactions affected referral rates.

In summary this is a well conducted study applying an appropriate methodology for the study question. As the authors already pointed out in the discussion, it would be very interesting to find out the reasons why GPs did not refer patients with a positive exercise test to further cardiologic evaluation.

**Major Compulsory Revisions:**

none

**Minor Essential Revisions:**

**Introduction:**

1. In the introduction the authors describe both the utility of the exercise test for prognosis (e.g. predictive value of a negative exercise test with respect to cardiovascular events) and for diagnosis of CHD. It is difficult for the reader to distinguish these two aspects and it would be helpful to divide this more.

The posttest probability of a positive or negative exercise test in regard to CHD highly depends on the respective pretest probabilities which can be derived from different criteria of the patient history (Exercise test: $LR_+ \text{ of } 3.1$ and $LR_- \text{ of } 0.4$ in patients with chest pain). This could be described better in the introduction and clearly be separated from the predictive value.

**Methodology:**

2. Line 138: Could you describe in one sentence the inclusion criteria (chest pain? Check-up in patients with known CHD?). Or was it left totally to the discretion of the referring GP whom to send for testing?

3. Line 153: which patients were ‘potentially eligible’? (see comment above)
4. Exercise test classification:
Why did you count only a depression of the ST segment >0.1 mV and chest pain as a positive test? In other classifications the ST depression is sufficient.
What about dyspnea, delayed increase of the heart rate or blood pressure? Did these also count in your classification?
Please also indicate the prerequisites for interpretation (e.g. the exercise threshold that had to be reached)

5. Reference diagnosis: How was this made in patients that did not undergo further cardiology work up. Did the researchers just take the respective entries out of the GPs documentation; or did a panel group discuss results of follow up examinations and then came to a conclusion? Please explain this better or insert a short paragraph named ‘reference diagnosis’

Discretionary Revisions
1. You could formulate e clearer study question (”to assess the importance of exercise tests” is too vague)
2. Results: Line 233 “Seventy-nine patients underwent coronary angiography”: it would be interesting to know the respective results (%age of patients where CHD was confirmed)

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
'I declare that I have no competing interests'