Reviewer’s report

Title: Validity, intra- and inter-observer reliability of automated devices for the assessment of Ankle Brachial Index using Photo-plethysmography

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Reviewer: Emilie Vierron

Reviewer’s report:

Comments on: Validity, intra- and inter-observer reliability of automated devices for the assessment of Ankle Brachial Index using Photo-plethysmography

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For: BMC Cardiovascular Disorders

This study assessed validity and reliability of two automated devices compared to the Doppler in the measurement of Ankle Brachial Index. This is an original work, clearly presented and written.

I appreciated that authors mentioned that their results are “exploratory”, justifying the choice they made (no adjustment on p-values for multiple testing).

Major Compulsory Revisions

1) The major point of the conclusion is that Doppler measurements provide better concordance than both of the automated methods. However there is no explanation or hypothesis about this point and the fact that ABI measurements obtained with automated devices are so subjects to variations. Could authors complete this part?

2) Then it is not clear why authors recommend using automated devices, which agree so badly with Doppler measurements. This point needs arguments.

3) Statistical methods should be more described. For example which method did authors use to calculate bias provided in tables (arithmetic mean of individual bias?) and to compare biases?

Minor Essential Revisions

4) First results presented are not really conventional (“distribution of acceptance […] 2/5/2/12/35”). Would it be possible to present them in another way, making their understanding easier (without re-reading the methods section (score with 5 values, from 1 to 5 etc…))?

5) Intra and inter observer reliability could also be assessed by the mean of intra class correlation coefficient. Could authors explain this choice?

6) Figures need titles. Please add them.
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests