Author's response to reviews

Title: Comparison of haematological parameters determined by the Sysmex KX-21N automated haematology analyzer and the manual counts

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Author's response to reviews: see over
EDITORIAL COMMENTS

1 Ethical approval has been documented. A statement to this effect has been added in the method section. We are sorry that this was advertently omitted.

2 A section on conclusion has been included in the manuscript. This comes after discussions.

3 A ‘competing interest’s section has been included between the conclusions and Authors’ contributions.

4 Authors’ contributions section has been included before the reference list.
REVIEW BY CAROL BRIGGS

1. SAMPLE SIZE, WHITE CELL ABNORMALITIES AND DESCRIPTION.

The number of samples used in the evaluation was limited to 60 because this study was funded by the authors and received no sponsorship. The finding on white cell abnormalities is mentioned in the study (reflected in table 1 as band form neutrophils).

The instrument did not indicate abnormal flags.

2. METHOD SECTION:

Describing all manual methods used in the study- which include the principles and procedures- for up to 15 parameters, would make the manuscript so bulky. This was why the Dacie and Lewis method, which is a universally accepted standard haematological protocol for assaying different parameters, is referred to in the section.

- 100 cells were counted by a competent and experienced medical laboratory scientist.

- The authors are not conversant with the CLSI method.

- The automated instrument that the authors are conversant with, counts cells per 100, neutrophils and lymphocytes separately and lumps the rest together in the differentials.

- The automated instrument is not structured/ designed to give any result about the blood picture (e.g. red cell, platelet or any other parameter); it only gives the total count.

Therefore, it would not be appropriate to compare differentials/blood picture from the manual count with that of automated.
- Samples with abnormal white cells, such as band form neutrophils were seen, as shown in table 1; but there were no reactive lymphocytes. This has been reflected in the result section (table 1).

- It should be noted that though imprecise, manual methods are still highly reliable especially in the hands of experienced medical laboratory scientists, as was the case in this study.

- The monocytes and eosinophils as reported from the automated results in table 2 were wrongly inserted and should not have been there as pointed out by the reviewer. Consequently, these have been deleted from table 2 and figure 2D, respectively.
REVIEW BY SHION IMOTO

1. Manual count was done by a competent and experienced single operator. It is difficult to show reproducibility of data as requested.

2. MCHC is one of the red cell indices which are of considerable clinical importance and are widely used in the classification of anaemia, the authors think the data on it is still necessary.

3. Platelet demonstrated a correlation coefficient $r = 0.9496$ (see results section) indicating that just a few cases deviated, and not several.

4. The difference between the manual and automated white cell differential count must have been due to the fact that the manual method gives a more accurate result on morphological examination than the automated method, as rightly pointed out by the reviewer.

FINALLY,

We are grateful for the detailed review.