Reviewer's report

Title: The association between objective tongue color and endoscopic findings: Results from the Kyushu and Okinawa Population Study (KOPS)

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Reviewer: Keun Ho Kim

Reviewer's report:

In this paper, Mosaburo Kainuma et al. showed associations between tongue color, endoscopic findings, H.pylori infection status, and serological atrophic gastritis in a large-scale study. This study is meaningful in that it provides an evidence for tongue color changes according to gastric conditions. The study is well performed, and the result is interesting. There are still a few questions as follows;

1. In this study, color variables of four points in tongue area were used. However, there is no description for criteria of the locations and pixel sizes for four points. The results showed that the tongue color differed according to the tongue regions, and significant levels in Table 2 seem to be related with the criteria of the locations and pixel sizes for four points. Therefore, the author could add the detail description about this.

2. I think that CIE L* is also important properties for determining changes of the tongue color. A human being can perceive a color of tongue with high L* as bright or pale red. And the problems of measurement errors related with tongue posture or lighting condition can also occur in CIE a* and b* since the color of light is not perfect white.

3. In the result, the reason for excluding participants who had two or more endoscopic finding was not described. Is there clinical meaning or statistical issue for the excluding?

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests.