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Letter: questions regarding the diagnostic performance of serum assays for atrophic gastritis – authors' reply

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Reply. We thank Dr. Graham for his interest (1) in our systematic review with meta-analysis on the diagnostic performance of the serum panel test for the diagnosis of atrophic gastritis (2).

His reminder that positive and negative predictive values depend on the prevalence of the condition in the population the test is being applied to is very relevant to the interpretation of the figures deriving from our meta-analysis of test accuracy studies conducted in different populations. This is one reason why we emphasized the median prevalence of atrophic gastritis in the studies being reviewed.

Dr. Graham will know that sensitivity and specificity do not provide information about the clinical impact of a test, i.e. how the test performs at a particular prevalence of disease; likelihood ratios do this by providing an estimate of positive and negative post-test probabilities of disease, but there is no evidence that likelihood ratios improve diagnostic decision making (3). A systematic review of test accuracy studies should help clinicians and health policy makers to decide whether to perform a test, and such a decision usually needs information also on the consequences coming from false negative or positive test results (3). Thus, in estimating predictive values we tried to provide further information on the clinical performance of the panel test.

Dr Graham's assertion that our interpretation of data is misleading may stem from a typographical error in our article, for which we apologize. In the discussion we stated that "the panel test would miss only nine subjects for every 100 with atrophic gastritis (negative predictive value = 91%)" when we meant to say "the panel test would miss the presence of atrophic gastritis in only nine subjects for every 100 with a negative

test result (negative predictive value = 91%)". If Dr Graham had based his calculations on the numerical results we reported, he would have achieved the same results as us.

We thank Dr Graham for highlighting a typographical error in one sentence of our discussion, but the summary sensitivity, specificity, positive and negative predictive values quoted throughout the abstract, text, tables and figures are correct.

In conclusion, we believe that the results our meta-analysis can support the role of the combination of pepsinogen, gastrin-17 and anti-Helicobacter pylori antibodies serum assays in screening subjects for gastric cancer prevention.

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The authors' declarations of personal and financial interests are unchanged

from those in the original article (2)