Review of: "Why Non-HDL Cholesterol is Preferred over Apolipoprotein B-100 (Apo B)"

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Potential competing interests: No potential competing interests to declare.

Reviewer comments

General comments

The manuscript entitled “Why Non-HDL Cholesterol is Preferred over Apolipoprotein

B-100 (Apo B)” aimed to assess non-HDLC for health risk assessment purposes with respect to apo B.

All abbreviations should have their full meaning well defined at least in the time of use.

Abstract

The objective here gives the impression that we are solving a mathematical problem. The Objective should be rephrased to address the problem of sensitivity and specificity of the proposed biomarkers.

Design, Setting, and Participants: Based on the explanation in the text, the research design looks like an unmatched case-control study. The authors should clearly define the research design used.

Introduction

The last paragraph should be edited to present only the objective of the study without including methodological procedures.

Methods

The authors should explain the rationale of the age range considered in the study.

The reference number for the ethical approval of the study should be provided.

The type of sampling method/procedure and the research design should be specified.

The authors should explain/justify the following “Six patients did not have apo B performed” and explain how this impacted the study.

Statistics: change the word «risk factors» by associated factors all through the paper as the research design does not allow to use this term. Also, le last sentence of this section look like results and should be reported in the appropriate

section under results.

Results

Table 1 is not well presented for a standalone understanding. Is it bivariate or multivariate logistic regression? Is it both? THe table needs to be improved.

In the first paragraph, third sentence, p-values are compared and the effect size (10 fold) are assess based on this. This is not the appropriate way of doing this. Effect size should be evaluated based on calculated odds ratios.

The sentence below the table is not accurate. Logistic regression also provides a means to assess the correlation between a binary variable and independent variables use a classification approach. Kindly provide the results of this classification table. ROC curve complement the work of logistic regression.

In general, the AUC, sensitivity and specificity reported in this study were very low for a new diagnosis biomarker. A test with low sensitivity can be thought of as being too cautious in finding a positive result, meaning it will err on the side of failing to identify a disease in a sick person. When a test's sensitivity is high, it is less likely to give a false negative. Specificity refers to the ability of a test to rule out the presence of a disease in someone who does not have it. In other words, in a test with high specificity, a negative is negative. A test with low specificity can be thought of as being too eager to find a positive result, even when it is not present, and may give a high number of false positives. The authors should be conscious about this. I suggest that they identify the best specificity and sensitivity of this biomarker using Younden approach.

Also from the 2 graphs, the test is more sensitive and specific after having adjusted. This should be highlighted that the factors adjusted have a positive effect on it. I would suggest screen factors one after the other to evaluate their impact on the sensitivity and specificity. This helps to answer to the following questions: is this test independent of age? Smoking status? Family history? The BMI or hypertension?

Conclusion

Provide a concluding statement as answer to the objective of the study.

THe results of the 10-year and lifetime risk of ASCVD should be provided in the results' section.

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