Letter by Sabour Regarding Article, “Coated-Platelets Improve Prediction of Stroke and Transient Ischemic Attack in Asymptomatic Internal Carotid Artery Stenosis”

To the Editor:

I was interested to read the article by Kirkpatrick and colleagues published in Stroke 2014 Oct. The purpose of the authors was to assess potential role of coated platelet levels for risk stratification in asymptomatic patients with carotid artery stenosis. They reported that a cutoff of ≥45% for coated platelet levels in combination with stenosis ≥50% yielded a sensitivity of 0.78, specificity of 0.92, positive predictive value of 0.21, and a negative predictive value of 0.99 for ipsilateral stroke or transient ischemic attack. This result has nothing to do with prediction of clinical outcome.

For prediction studies, we need 2 different cohort data set or ≥1 cohort data set splitting that to develop our prediction model and then to validate it. Without validation of prediction models, most of the times, misleading results will be the main outcome of such researches.

Moreover, statistically significant difference in the incidence rate of ipsilateral stroke or transient ischemic attack between groups (21.5 versus 1.27 per 100 person-years; P<0.0001) does not mean clinically importance of the finding and should not be considered for clinical decision-making especially in prediction studies.

Finally, sensitivity, specificity, positive predictive value and negative predictive value, as well as likelihood ratio positive and negative, diagnostic accuracy, and odds ratio, are well known estimates to assess validity (accuracy) of a single test compared with a gold standard. Therefore, positive predictive value (which is important for clinical decision-making) equal to 0.21 means only 1 out of 5 patients with positive test results will have the outcome.

Based on their conclusion, coated platelet levels identify asymptomatic carotid stenosis patients at high risk for stroke or transient ischemic attack, which suggests a role for coated platelets in risk stratification before revascularization. It is important to mention that positive predictive value depends on the prevalence of the outcome (the higher the prevalence, the higher the positive predictive value); therefore, generalizability of their results is also limited and their conclusion can be a misleading message.

Disclosures

None.

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