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LETTER

Exploring New Avenues for OSA Screening: Optimization and Future Perspectives of Nomogram for Hypertensive Patients [Letter]

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Dear editor

We carefully read the article "Optimizing Obstructive Sleep Apnea Risk Assessment in Hypertension: Development of a Predictive Nomogram in China" published by Yang,[1] which constructed a predictive nomogram of OSA (Obstructive Sleep Apnea) risk for hypertensive patients. This nomogram is clinically important for early screening of OSA. However, after carefully reading the study, we have some methodological doubts. Therefore, we would like to take this opportunity to communicate with the authors.

We note that the waist circumference (WC) variable was also statistically significant in the one-way logistic regression analysis of this study, even more so than the differences in age and sex, suggesting that WC may be a stronger predictor of OSA. However, the authors ultimately did not include WC in the nomogram model. WC mainly reflects abdominal fat accumulation, and increased abdominal fat can lead to diaphragmatic upward shift, decreased lung capacity, and aggravate upper airway collapse, which directly affects the occurrence and severity of OSA. WC, as an indicator of obesity, also has strong predictive potential for OSA, as reported by a national health survey in the United States.[2] If WC was not included in the model in this study, it may affect its prediction accuracy.

The study compared the predictive performance of the nomogram model with the STOP-Bang scores using Receiver Operating Characteristic (ROC) analysis and reported a higher Area Under the Curve (AUC) for the nomogram than for the STOP-Bang. However, the authors did not perform a DeLong test to statistically validate whether these AUC enhancements were significant.[3] Since AUCs between 0.7 and 0.9 are considered to be of "moderate predictive accuracy", the small increase may be due to sample fluctuations rather than the real effect of model optimization. Therefore, numerical comparisons alone cannot prove that the nomograms are significantly better than STOP-Bang.

This study aimed to optimize OSA screening in hypertensive patients, but the key variables in its prediction model (BMI, age, neck circumference, and gender) were highly overlapping with the STOP-Bang score (4/5 variables were the same).[4] However, the authors note in the introduction section that STOP-Bang is less specific and emphasize the need for more accurate screening tools. As readers, we are puzzled by this approach. As the main variables of the nomogram are still dominated by anthropometric indicators, we suggest the introduction of new objective data indicators (hematological indicators) to improve the specificity and clinical utility of the model.[5]

As psychiatrists in a primary care hospital, this has given us some insight. We have noticed a strong association between OSA and psychiatric disorders in our daily practice. OSA is prevalent in psychiatric patients, but due to limitations in screening tools, OSA goes undetected and unintervened in many of our patients. In this study the authors developed a nomogram that simplifies the early screening process for obstructive sleep apnea, helping psychiatrists, respiratory physicians, and general practitioners to quickly identify high-risk patients and optimize referral decisions, which could ultimately benefit patients.

Data Sharing Statement

No new data was generated for this communication.

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Author Contributions

Hongrun Pan: Methodology, Formal analysis, Writing - Original Draft; Suqiong Yang and Peikun Hong: Conceptualization, Methodology, Supervision, Writing - Review & Editing. All authors agreed on the journal to which the article will be submitted, reviewed and agreed on all versions of the article before submission, during revision, the final version accepted for publication, and any significant changes introduced at the proofing stage and agreed to take responsibility and be accountable for the contents of the article.

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Disclosure

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this communication.

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