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LETTER

Enhancing Predictive Models for Ustekinumab Effectiveness in Crohn's Disease: Suggestions for Improved Clinical Applicability [Letter]

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Dear editor

We recently reviewed the article "Prediction of the Short-Term Effectiveness of Ustekinumab in Patients with Moderate to Severe Crohn's Disease" by Tao Su et al.[1] This work offers valuable support for the implementation of precision medicine and addresses the screening challenges faced by patients with moderate to severe Crohn's disease (CD) undergoing treatment with ustekinumab (UST). By doing so, it helps to minimize resource wastage and alleviate the financial burden on patients. We would like to offer some constructive suggestions to enhance this prediction tool.

First, one can integrate the advantages of various models by selecting alternatives, such as random forests, to achieve a balance between interpretability and predictive performance.[2] The author demonstrates rigor in the theoretical construction and presentation of the prediction model, employing least absolute shrinkage and selection operator (LASSO) regression analysis, area under the receiver operating characteristic curve (AUROC), and decision curve analysis (DCA) to conduct a comprehensive investigation that spans feature selection, validation effectiveness, and clinical application verification. However, this model predominantly relies on linear relationships and necessitates a larger sample size to enhance the reliability of the results. Given that clinical disease progression and treatment are inherently dynamic, optimizing model selection and incorporating non-linear relationships could further enhance the model's implementation capabilities and clinical value.

Second, the long-term use of other medications by CD patients may influence the therapeutic effects of UST. This study focused exclusively on patients receiving vedolizumab treatment as potential confounding factors, without thoroughly investigating the presence of other comorbidities in treated CD patients, such as hypertension, chronic obstructive pulmonary disease, dyslipidemia, and hormonal abnormalities.[3] Additionally, these patients may be on long-term medications, including antihypertensives,[4] lipid-lowering agents, antidiabetic drugs,[5] antibiotics, and other biologic therapies. These medications could impact the intestinal microbiota or immune response, thereby influencing both the pathogenesis and treatment outcomes of CD in both beneficial and detrimental ways, ultimately affecting the efficacy of UST.[6] Consequently, the use of concomitant medications should be considered a potential predictor when evaluating treatment outcomes.

This article presents innovative ideas and tools for the treatment of CD using UST, marking a significant advancement towards the implementation of personalized treatment strategies for CD. It is anticipated that, in the future, collaborative efforts among healthcare professionals, social workers, and government entities will enhance the clinical applicability and decision support value of the proposed model. This enhancement can be achieved through further external validation, dynamic modeling, variable optimization, and tool integration, ultimately providing more effective treatment options for a greater number of CD patients.

Disclosure

The authors report no conflicts of interest in this communication.

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