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LETTER

Dynamic Changes in Complement Proteins in the Aqueous Humor and Plasma of Patients Undergoing Ranibizumab Treatment for Retinal Vein Occlusion: A Need for Further Research [Letter]

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Dear editor

As we are actively engaged in pertinent research, we have taken a significant interest in a recently published original article entitled "Dynamic Complement Protein Changes in Aqueous Humor and Plasma of Patients With Retinal Vein Occlusion During Ranibizumab Treatment" by Guo et al, featured in the Journal of Inflammation Research.[1] We extend our heartfelt congratulations to the authors for their commendable work. The study analyzed the dynamic changes in complement proteins within the aqueous humor and plasma of patients with retinal vein occlusion (RVO) undergoing ranibizumab treatment. It illuminated the regulatory effect of ranibizumab on the intraocular complement system, while also highlighting the differences between branch retinal vein occlusion (BRVO) and central retinal vein occlusion (CRVO) patients. Although the study design is innovative to some extent, certain limitations remain, and potential improvements can be explored further.

Firstly, the research included only 27 RVO patients, of which merely 8 were CRVO patients. The small sample size may restrict the generalizability and statistical power of the results, especially in subgroup analyses. Secondly, the study did not incorporate a healthy control group or RVO patients who had not received ranibizumab treatment as a comparator, making it challenging to completely eliminate the influence of other factors on complement protein levels. Thirdly, while the study identified correlations between certain complement proteins and changes in central retinal thickness (CRT), it found no significant association between complement protein levels and best-corrected visual acuity (BCVA). This might relate to the complexity of visual function. Cehofski et al discovered a correlation between complement protein levels and vision improvement in RVO patients, although this relationship is influenced by various factors, such as disease duration and baseline vision. Fourthly, the complement system is a complex network involving multiple activation and regulation pathways.[2] Although the study showcased ranibizumab's influence on certain complement components, it did not delve deeply into the specific mechanisms underlying these changes. Kim et al elaborated on the role of the complement system in retinal diseases, highlighting intricate interactions between the complement system and the VEGF pathway.[3] Fifthly, the study suggests that CRVO patients may require more extensive treatment and that complement protein levels might serve as biomarkers for predicting treatment response. Hogg et al found that baseline inflammatory factor levels could predict the response of RVO patients to anti-VEGF therapy.[4] Lastly, the study followed patients for only three months. Future studies should extend follow-up periods to assess the long-term impact of ranibizumab on the complement system and its association with disease recurrence.

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In summary, although there are some shortcomings, we acknowledge the fresh perspective provided by the authors. Their research highlights the importance for clinicians to increase their vigilance regarding RVO. It underscores the necessity of promptly recognizing the role of ranibizumab in managing RVO and implementing effective intervention strategies to mitigate the incidence of RVO, a frequently encountered and significant adverse event in clinical settings.

Disclosure

The authors report no conflicts of interest in this communication.

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