Comment on "The risk assessment of uveitis after COVID-19 diagnosis"

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Abstract

Several suggestions were made for the study by Hsia et al[1] regarding uveitis risk following COVID-19 diagnosis. We recommend the authors align the racial composition of study groups more closely with that of U.S. demographics. In addition, we recommend the study to include possibility of false negatives from PCR testing. Lastly, we suggest the authors to consider cases of self-limiting uveitis and relapses independent of COVID-19.

Keywords: uveitis risk, COVID-19, racial composition, PCR testing, self-limiting uveitis, relapses

To the Editor,

We read with great interest the study by Hsia et al[1]regarding the risk assessment of uveitis after COVID-diagnosis. We appreciate the authors' attention to detail by eliminating possible confounding variables that may contribute to uveitis development. Furthermore, we were impressed by the robust study design incorporating propensity score matching, long follow-ups, and immense study size of more than 4 million patients using the TriNetX analytics platform.

Nevertheless, to enhance this study, we recommend the following considerations.

First, this study utilized the US research network, covering about 92 million patients to form a COVID-19 cohort and a non-COVID-19 control group, each with 2 million patients, of which 62.5% and 62.4% were white, respectively. This underrepresents the white population by 13% compared to the 75.5% white representation in the 2022 US census. Future studies should align the racial composition of study groups more closely with national demographics.

Second, the authors identified COVID-19 cases based on positive PCR tests or antibody immunoassays. Yet, Binny et al's study in New Zealand illustrates how PCR test sensitivity fluctuates across the COVID-19 infection timeline, influenced by viral load and patient age.[2] The sensitivity of PCR tests peaks at 92.7% between 4 to 5 days post-infection, then drops to 88% from 5 to 14 days, while specificity remains near 100%.[2] This indicates a higher likelihood of false negatives and very low false positives in PCR testing. Highlighting this significant limitation in the discussion section would be beneficial.

Third, this study excluded those diagnosed with uveitis within 6 months before COVID-19 infection, potentially overlooking undiagnosed, self-limiting cases that may resurface post-infection. 10% of intermediate uveitis cases resolve on their own, and anterior uveitis, while often self-limiting, can cause severe complications.[3,4] Moreover, uveitis relapses, as reported in Grunwald et al's study, could occur independently of COVID-19, leading to misattribution of these cases to COVID-19.[5] These aspects represent potential limitations of the study that warrant discussion.

In conclusion, the study by Hsia et al[1] is a major milestone towards incorporating uveitis assessment among COVID-19 patients in healthcare guidelines. This study has tremendous potential to save numerous patients from glaucoma, cataracts, and permanent vision loss. To improve this study, we recommend authors to adjust

study groups so that white patients are adequately represented, discuss the possibility of false negatives from PCR testing, and consider cases of self-limiting uveitis and relapses independent of COVID-19.

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