

# CXCL13 Is a Biomarker of Anti-Leucine-Rich Glioma-Inactivated Protein 1 Encephalitis Patients [Letter]

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## Dear editor

We recently read the original report by Lin and colleagues with great interest. In this study, the authors concluded that both serum and cerebrospinal fluid (CSF) levels of CXCL13, a B cell chemotactic factor, were significantly higher in patients with anti-leucine-rich glioma-inactivated protein 1 (anti-LGI1) encephalitis compared to non-inflammatory neurologic disorder control groups.<sup>1</sup> However, we have some concerns about the interpretation of their data.

Previous research has shown that patients with anti-LGI1 encephalitis do not show significant cytokine and chemokine alterations in the CSF.<sup>2</sup> However, the authors inferred an opposite conclusion that both serum and CSF levels of CXCL13 were significantly higher in patients with anti-LGI1 encephalitis versus non-inflammatory neurologic disorder control groups. Specifically, the dispersion around the mean serum level of CXCL13 ( $36.32 \pm 34.71$  pg/mL) was much larger in this study, compared to other cytokine and chemokine levels that remained unchanged between groups. We believe that the statistical significance of this major finding of the study may be over-estimated, as the authors did not use a Bonferroni correction or a multifactorial analysis of variance. Furthermore, the blood-brain barrier permeability as measured by albumin index (i.e., the albumin level ratio, CSF/serum)<sup>3</sup> was not accounted for in this study. Therefore, it is unclear if serum or CSF CXCL13 plays a more important role in the pathogenesis of anti-LGI1 encephalitis. Additionally, increased circulating CXCL13 levels can also be found in other autoimmune diseases such as rheumatoid arthritis.<sup>4</sup> Thus, the specificity of CXCL13 as a biomarker for anti-LGI1 encephalitis, may not be as high as the authors would predict, due to potential coexistence of anti-LGI1 encephalitis and other autoimmune diseases. We recommend that these potential confounders be noted by the editors to ensure that other researchers are similarly critical in their interpretation of these data.

## Disclosure

The authors report no conflicts of interest in this communication.

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