CXCL13 Levels in LGI1- and CASPR2-Autoantibody Syndromes

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Background and Aims
C-X-C Motif chemokine ligand 13 (CXCL13) is a cytokine secreted by stimulated antigen presenting cells which modulates B and plasma cell function and homing to germinal centres (GCs), mainly via the chemokine receptor 5. Plasma CXCL13 levels have been shown to be a marker of germinal centre activity[1], and CXCL13 levels are elevated in the CSF of patients with multiple sclerosis[2], NMDA-R-antibody encephalitis[3,4], and neuromyelitis optica[5].

Our objectives were to compare concentrations of CXCL13 in patients with LGI1- and CASPR2-antibody mediated syndromes, and correlate levels with clinical parameters and explore the concept of active GC reactions in these patients[6].

Methods
Serum CXCL13 levels were determined by sandwich ELISA in 143 samples from 31 subjects: LGI1 (n=86 from 19 patients) and CASPR2 (n=37 from 12 patients), and healthy controls (HC, n=20), and evaluated with the Mann-Whitney test.

Results
LGI1-antibody patients showed higher serum levels of CXCL13 compared to CASPR2-antibody patients and HCs ($p<0.0001$, Figure 1). No differences were observed between CASPR2-antibody patients and HCs ($p=0.1627$). While, overall, non-relapsing versus relapsing LGI1-antibody patients showed no differences, within individual patients the trends of CXCL13 gave informative dynamic data over time.

Conclusions
Highest CXCL13 levels were detected in LGI1-antibody patients. There were clear dynamic changes, with markedly high levels at onset, and sharp rises during relapses. Overall, these findings suggest that sustained, ongoing GC-reactions may occur, particularly in LGI1-antibody syndromes, highlighting disparate mechanisms of disease perpetuation in the closely linked entities of LGI1- and CASPR2-antibody diseases, akin to dichotomous findings of HLA-associations in these patient groups[7].

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