ABN abstract

A comparison of NMDAR-antibody detection methods

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N-Methyl-D-Aspartate receptor antibody (NMDAR-ab) encephalitis is the most common antibody-mediated encephalitis. We compared four NMDAR-Ab assay methods: 1) live (a, L-CBA) or fixed (b, F-CBA) cell-based assays (CBA); 2) immunohistochemistry (IHC); 3) a commercially available CBA (C-CBA, *Euroimmun AG*).

180 sera and 48 CSFs were tested. Sera previously positive by the Oxford L-CBA but with unlikely phenotypes were intentionally over-represented. The results of the four assays agreed in only 55.6% of sera and 82% of CSFs. C-CBA was least likely to agree with other methods (37.7% in serum). Diagnosis was available, so far, for 54 patients (NMDAR ab-encephalitis "definite" in 34, "unlikely" in 20). In serum, L-CBA detected NMDAR-abs in 88% of "definite" patients, but had a high false-positive rate (consistent with the biased selection). IHC was negative in all unlikely patients, but positive in only 73.5% "definite" patients. F-CBA and C-CBA had intermediate performances.

There was a worrying lack of concordance between tests. Assay results should be interpreted in the light of clinical information and a combination of L-CBA and IHC may give the most useful results. Further clinical information is being made available in order to increase the serum numbers and determine assay performance using CSF alone.

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