ANTINEURONAL ANTIBODIES IN IMMUNO-MEDIATED CNS DISEASES

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Aim: To summarize the importance of antineuronal antibodies (ANeuA) in the diagnosis and prognosis of patients with autoimmune encephalitis (AIE) and multiple sclerosis (MS).

Materials and methods: Literature data on the classification and frequency of ANeuA as a diagnostic and prognostic marker and methods for their detection have been studied.

Results: The summary of the literature on ANeuA reveals two main groups: 1) directed against intracellular antigens (anti-Hu,anti-Yo,anti-Ri,anti-Tr,anti-amphiphysin,anti-CRMP5,anti-recoverin,anti-GAD65 and anti-Ma2) and 2) associated with cell surface antigens (anti-NMDAR,anti-AMPAR,anti-LGI1,anti-CASPR2, anti-DPPX,anti-VGKC,anti-VGCC,anti-mGluR5 and anti- GABABR). The first are most commonly associated with classic paraneoplastic disorders with an unfavorable prognosis due to irreversible neuronal loss, the severe clinical picture of associated neoplasms, and difficulties in immune control. The second group of antibodies causes reversible effects on synaptic function in neurons with relatively low neuronal death. The most common indications for ANeuA testing are AIE and MS. Methods for their detection are immunohistochemical, immunofluorescent, ELISA and immunoblot. In addition to serum, it is important to detect them in cerebrospinal fluid. Recent studies have shown that antibodies to non-myelin antigens are more important in the pathogenesis of MS than antimyelin antigens. Own results from a study of 4 pediatric patients with AIE and 19 with MS for serum antineuronal antibodies by immunoblot and indirect immunofluorescence are also presented.

Conclusion: ANeuA may be useful biomarkers for some autoimmune CNS diseases, correlating with their clinical picture, outcome, and prognosis.

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