A case of paraneoplastic limbic encephalitis mediated by anti AMPAR antibodies: importance of early immunotherapy treatment

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Introduzione

To report the case of a patient with Autoimmune Encephalitis (AE) in which laboratory testing led to misdiagnosis and delayed appropriate treatment

Metodi

Antibodies against neuronal surface were tested with a commercial cell based assay (c-CBA) and also with an in-house CBA using live cells. In addition, immunohistochemistry (IHC) was performed using rat brain slices fixed with 4% paraphormaldehyde.

Risultati

A 69 years-old male patient was hospitalized for progressive cognitive impairment of recent onset. Other symptoms were behavioral changes, sleep disorder and unexplained hyponatremia. Neuropsychological tests showed a moderate cognitive impairment involving executive functions and episodic memory. Brain MRI showed a monolateral right hippocampal alteration. In the suspicion of AE antibodies against neuronal surface protein were tested (c-CBA) with negative results. Eight months later, serum and cerebrospinal fluid were re-tested with IHC. A staining involving both hippocampal and cerebellar structures was detected, resembling that of the I±-amino-3-hydroxy-5-methyl-4- isoxazolepropionic acid receptor (AMPAR), a result also confirmed with an in-house live-CBA. The patient was treated, about 10 months after the onset of first symptoms, with plasma exchange (PlEx). After PlEx the patient showed a stable mild cognitive impairment. Serum retesting showed a drop in AMPAR antibodies. After 12 months the patients underwent a new complete examinations due to development of weigth loss, fever and fatigue: CT body scan showed numerous enlarged chest lymphnodes under investigation for lymphoma.

Conclusioni

AE is an expanding field in neurology. Recent criteria can help the clinical approach to AE, but antibody testing still remains pivotal for diagnostic confirmation. Widely available commercial kits have improved diagnostic of AE, but poor data exist on their sensitivity and specificity. We showed that alternative methods for antibody detection, performed in specialized laboratories, can provide additional information and avoid misdiagnosis. In our patient, the limited but detectable response to immunotheraphy could have been attributed to the delayed administration. AMPAR-antibody encephalitis is associated with tumour in 65 % of cases [1]. In our patient, as reported in other paraneoplastic disorders, the neurological syndrome preceded the detection of the tumour, showing the importance of screening for cancer during follow-up. In sieronegative AE, samples should be send to a specialized laboratory able to perform a battery of advanced techniques in order to improve the diagnostic accuracy. If the clinical suspicion is strong, treatment should be administered before antibody results are available, since delay in treatment can affect the outcome [1].

Bibliografia

[1]GrausF, Titulaer MJ, Balu R, et al. A clinical approach to diagnosis of autoimmune encephalitis. Lancet Neurol. 2016 Apr;15(4):391-404.