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Limbic encephalitis associated with potassium channel antibodies: demonstration of clinical and paraclinical responses to immunotherapy

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Background

Limbic encephalitis (LE) is an inflammatory disorder of the central nervous system (CNS) that can be of paraneoplastic or primary autoimmune origin. The disorder is characterized by personality changes, emotional disturbances, mental status changes, behavior abnormalities, confusion, memory deficits and seizures.

Materials and methods

We describe the case of a 79-year old patient with symptoms of LE who presented with high fever, affective changes in personality, auditory hallucinations, memory loss, irrelevant talking and confusion. The brain MRI at admission showed a left hippocampal T2-weighted lesion with meningeal gadolinium-enhancement and the EEG showed periodic lateralized epileptiform discharges (PLEDS) on the left temporal area. Routine blood tests were normal. CSF examination at admission revealed 50 cells/mm3, predominantly polynuclear (87%) and 0.74 g/l proteins. Polymerase chain reaction for herpes virus 1 to 3, 6 and enterovirus were negative. The patient was treated with acyclovir but three weeks later he developed myoclonia with secondary generalized epileptic seizures. The serum was negative for paraneoplastic antibodies including Hu, Yo, Ri, CV2/CRMP5, Amphiphysin, Ma2/Ta.

Results

Despite the anti-epileptic treatment, the patient's symptoms deteriorated. MRI showed new lesions. The EEG showed a new focus of right parietal PLEDS. Serum voltage-gated potassium channel antibodies (VGKC-Ab) were detected at high levels (3.495 pM). Steroids and plasma exchange were initiated with marked and sustained improvement of neuropsychological function. This clinical improvement correlated with both EEG and radiological amelioration.

Conclusions

Limbic encephalitis associated with positive VGKC-Ab is a rare condition usually of non-paraneoplastic autoimmune origin. Patients presenting with symptoms mimicking viral or paraneoplastic limbic encephalitis, should be promptly investigated for VGKC-associated encephalopathy. A marked clinical and paraclinical improvement, such as observed with this patient, is usually seen when immunosuppressive therapy is rapidly initiated.

References

1. Angela Vincent, Buckley Camila, Schott Jonathan M., Baker Ian, Dewar Bonnie-Kate, Detert Niels, Clover Linda, Parkinson Abigail, Bien Christian G, Omer Salah, Lang Bethan, Martin N: **Rossor and Jackie Palace. Potassium channel antibody-associated encephalopathy: a potentially immunotheraspy-responsive form of limbic encephalitis.** *Brain* 2004, **127(3):**701-712.
2. Urbach H, Soeder M.S, Jeud M, Klockgether T, Meyer B, Bien G.C.: **Serial MRI of limbic encephalitis.** *Neuroradiology* 2006, **48:**380-386.

3. Thieben M.J, Lennon V.A., Boeve B. F, Aksamit A.J, Keegan M, Vernino S: **Potentially reversible autoimmune limbic encephalitis with neuronal potassium channel antibody.** *Neurology* 2004, **62:**1177-1182.