EAN abstract

The field of autoantibody-mediated forms of epilepsy has emerged and expanded in the last decade. Autoantibody specificities include those against LGI1 and CASPR2, and the GABAB, NMDA and GABAA receptors. Patients with these antibodies have several clinical characteristics which can help distinguish each antigen specificity. For example, patients with LGI1-antibodies have frequent focal seizures with semiologies including thermal sensations, automatisms and - perhaps most distinctively - faciobrachial dystonic seizures (FBDS). All of these, but especially FBDS, often present prior to the onset of cognitive impairment. This is important because not only do all these seizure semiologies respond well to immunotherapy, but effective treatment of FBDS may be sufficient to prevent the onset of the disabling cognitive impairment (Figure 1). By contrast, patients with NMDAR-antibodies have fewer seizures and can be clinically identified by their complex psychopathological profile which corsses multiple traditional psychiatric diagnoses (Figure 2), and their multifaceted movement disorder.

More recently, the underlying propagating molecular immunology and pathogenic mechanisms by which the autoantibodies modulate neuronal function have been better elucidated. Immunologicaly, strong HLA associations have been observed in patients with LGI1- and CASPR2-antibodies (Figure 3), and the ovarian teratoma associated with NMDAR-antibodies has histological and functional characteristics of a germinal centre. Neuroscience studies have shown that most autoantibodies internalise their target receptor causing reduced surface expression of the target antigen. Excitingly, some directly modulate the function of their target.

In summary, these diseases have distinctive clinical and biological features which I will discuss in this lecture.