

Electroclinical and aetiological features of intractable post-encephalitic epilepsy: Differences between herpetic and non-viral encephalitis

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Objective and Methods: The clinical, EEG and imaging features of postencephalitic epilepsy are not well described. We reviewed the histories and virological, psychological, EEG, video-EEG and MRI studies of 17 children with intractable epilepsy following encephalitis, evaluated between 1991-2003. Results are presented for 7 proven herpes simplex encephalitis patients and 6 virology-negative encephalitis patients.

Results: Seizures were refractory in all patients, to drugs in 13, surgery in 4 and vagal nerve stimulation in 4. Prolonged status epilepticus complicated encephalitis in 5 virology-negative encephalitis patients but in none of the herpes simplex encephalitis patients. Epilepsy immediately followed encephalitis in 4 virology-negative encephalitis patients but began 0.2-5 years later in 7 herpes simplex encephalitis patients. Seizures were focal motor in 6 virology-negative encephalitis patients, generalised in 6 herpes simplex encephalitis patients and complex partial in 1 herpes simplex encephalitis patients. Interictal EEG showed bilateral multifocal discharges in both groups; generalised/bisynchronous discharges were seen in 7 herpes simplex encephalitis patients but in only 2 virology-negative encephalitis patients. Ictal EEG showed lateralised fast and spike rhythms in 6 virology-negative encephalitis patients (unilateral 2, independent bilateral 4, contralateral activation 3) but in only 1 herpes simplex encephalitis patients; generalised onset was seen in 6 herpes simplex encephalitis patients but in none of the virology-negative encephalitis patients. MRI revealed no abnormality in 4 virology-negative encephalitis patients, bilateral hippocampal sclerosis and mild cerebral atrophy in 2 virology-negative encephalitis patients and unilateral encephalomalacia with ipsilateral hippocampal sclerosis in 7 herpes simplex encephalitis patients.

Conclusion: The electroclinical features of postencephalitic epilepsy suggest bilateral, neocortical involvement, despite imaging showing medial or unilateral abnormalities in some patients. The absence of a silent period, lack of encephalomalacia, and presence of bilateral focal rather than generalised seizures and EEG abnormalities, suggest epilepsy following virology-negative encephalitis is a different clinicopathological entity to post herpes simplex encephalitis patients epilepsy.