IS AGGRESSIVE THERAPY JUSTIFIED FOR ALL TYPES OF STATUS EPILEPTICUS? NO

P.A.J.M. Boon
Ghent University Hospital, Belgium

Status epilepticus can be classified as generalised status epilepticus (convulsive and non-convulsive) and partial status epilepticus (simple partial and complex partial). When extrapolated from studies in the U.S., there are an estimated 152.000 cases per year in Europe, associated with a hospitalization cost of 4-7 billion Euro and 42.000 deaths per year. Over half the cases of SE are acute symptomatic emphasising the importance of identifying an acute precipitant. Infections are the major cause of status epilepticus in children accounting for half of the cases. In adults low antiepileptic drug levels, cerebrovascular accident, hypoxia, metabolic causes and alcohol intake represent the main acute causes. The mortality of SE is between 20-30%, most patients dying of the underlying condition, rather than SE itself. The variation of mortality rates in various studies probably relates to the spectrum of aetiologies rather than differences in treatment. Status epilepticus can result in permanent neurological and mental deterioration, particularly in children. Moreover, nearly half of the patients with acute symptomatic SE will present with subsequent unprovoked seizures.

Generalized convulsive status epilepticus is a neurological emergency associated with considerable morbidity and mortality and should be treated promptly, in a staged way.

Non-convulsive status epilepticus (NCSE) makes up around one-third of all cases of SE. Compared with convulsive SE, NCSE has received considerably less attention, is underdiagnosed and undertreated. However, if recognised, NCSE can be treated successfully with antiepileptic drugs without the need for more aggressive therapy. In order to determine the need for such aggressive therapy, one needs to identify the prognosis of NCSE. This is complicated by several factors: under-recognition of NCSE with its spontaneous resolution (thus decreasing the "denominator" of total cases that will have a poor outcome); incorrect diagnosis of NCSE based on misinterpretation of EEG "epileptiform" activity; misclassification of certain EEG patterns as NCSE (e.g. PLEDs; triphasic waves); and grouping of different populations that have markedly different co-morbidities (ambulatory patients with NCSE together with comatose patients with electrographic seizure activity on EEG). There are almost no prospective studies with premorbid neuropsychometric studies, and retrospective studies typically include isolated cases, or case series that include conditions in which the cause of NCSE itself causes cognitive morbidity.

Absence status (ambulatory generalized non-convulsive status epilepticus) probably has no lasting morbidity. Complex partial status epilepticus in ambulatory patients rarely results in measurable permanent neurologic deficit, although rarely, short or long-standing deficits may clearly occur. Because treatment with intravenous anticonvulsants (e.g. benzodiazepines, phenytoin, valproate or levetiracetam) can confer morbidity, the equation has not yet been made as to whether the morbidity of such treatment for all cases of NCSE exceeds the morbidity of the disease itself. Larger, prospective studies will be needed to truly determine the prognosis in the different types of NCSE, stratified according to associated degrees of impairment (minimally impaired, moderately obtunded, comatose). Confirmation of diagnosis with EEG should be obtained wherever possible. In view of the often subtle clinical signs, EEG is also vital for monitoring treatment outcome. Non-comatose patients should generally be treated in a neurology ward since referral to an ICU is unnecessary. First-line treatment should be an intravenous benzodiazepine. For many patients who fail to respond to benzodiazepines, intravenous phenytoin, valproate or levetiracetam will successfully abrogate seizure activity. Time and care should be spent in identifying an appropriate and effective antiepileptic drug regimen without recourse to anaesthesia. For comatose patients, treatment intensity should be graded according to epilepsy history, general medical state and prognosis. In some patients, intensive remedial measures may allow rapid resolution of NSCE, whereas in more vulnerable patients, such treatment may be counterproductive.