Should non-convulsive status epilepticus (NCSE) be treated aggressively?

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There are several clinical challenges in the diagnosis and management of NCSE .The working definition involves a prolonged state of impaired consciousness or altered sensorium, associated with continuous paroxysmal activity or electrographic discharges on the EEG.This mandates the need for continous EEG monitoring of these patients.NCSE may be more common than thought: 25 % of all SE, about 27% of ICU pts with altered mental status and 8% of pts in coma /critically will have NCSE.

NCSE often has the following problems. Frequent subtle/no clinical manifestations except altered sensorium, a need for EEG confirmation of ongoing epileptic activity, physicians lack of awareness of the possibility of NCSE, underdiagnosis and deleterious consequences with increased mortality and morbidity.

NCSE has steadily became a therapeutic Pandora's box and often is a nightmare to manage due to its unusual clinical features requiring an high index of suspicion, challenging EEG patterns, controversial/unclear treatment paradigms & prognosis.

Response to treatment is one of the modes of confirming the diagnosis a positive response to antiseizure and antistatus medication would go in favour of the diagnosis. Hence treatment is a part and parcel of the diagnosis.

Response to anticonvulsants both clinical and EEG is controversial,and sadly often initiated after long delay.

It is recommended to initiate treatment quickly – when NCSE developed out of convulsive status epilepticus (CSE) as per accepted guidelines for the management of CSE and as soon as it is suspected when happening denovo.

Treatment recommendations are different for the various subtypes-

Absence SE: BZD, if resistant VPA / PB

Discontinue / Avoid AEDs which trigger SE

Complex partial NCSE (CPNCSE) : similar to CSE

NCSE in coma: dilemma about diagnosis and treatment exist but aggressive treatment similar to that for subtle SE epilepticus, Intravenous AEDs are a must because the response to first-line treatment may be poor (IV benzodiazepine must be used for both diagnostic and therapeutic purposes under EEG surveillance) many AEDs must be tried. There is a scope for a good outcome with aggressive treatment approach

Response to treatment may be quite delayed, often as much as 24 h or longer in NCSE

and depends on the subtype, underlying etiology & timing of treatment. Mortality rates of 20-30% may be due to the underlying etiology itself or the complications of disease / treatment.

In CPSE a mortality of 18% is based on etiology

In Children a mortality rate of 25 %, and in elderly it is higher to about 56%

Cognitive sequel are found after 15-30 % of adults and would be worse if no aggressive management is done.

Unfortunately it will not be prudent to miss or under treat these patients with uncertainty in approach and this be realised retrospectively. It is hence necessary to have a deft and all FIRE BRIGADES blazing approach to put out the fire in NCSE.

Reading: Sutter et al 2012, *Celesia 1976, Tomson 1992, Drislane 2000, Towne 2000,* Narayanan JT 2007, Knake et al, 2001, *Sutter et al 2012 , Maganti 2008 , Walker MC 2001 , Treiman DM, 2006 , Fountain NB 2000, Shneker BF 2003 , Kjersti NM 2014, Abend NS 2015 , Rai V 2013.*