



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2016; 2(8): 631-632
www.allresearchjournal.com
Received: 02-06-2016
Accepted: 03-07-2016

Dr. Ismail J Namazi
M.B.B.S; M.D, Professor of
Department of Anesthesia,
Dr. Dy Patil Hospital Kohapur
Dr. D. Y. Patil Hospital and
Research Centre, Kadamwadi,
Kolhapur, Maharashtra, India

Dr. Archita Patil
M.B.B.S; M.D, Assistant
Professor in Department of
Anesthesia Dr. Dy Patil
Hospital Kohapur, Dr. D. Y.
Patil Hospital and Research
Centre, Kadamwadi,
Kolhapur, Maharashtra, India

Dr. Anuradha Deotale
M.B.B.S. Third Year Resident
in Department of Anesthesia
Dr. Dy Patil Hospital
Kohapur, Dr. D. Y. Patil
Hospital and Research Centre,
Kadamwadi, Kolhapur,
Maharashtra, India

Correspondence
Dr. Anuradha Deotale
M.B.B.S. Third Year Resident
in Department Of Anesthesia
Dr. Dy Patil Hospital
Kohapur, Dr. D. Y. Patil
Hospital and Research Centre,
Kadamwadi, Kolhapur,
Maharashtra, India

Thiopentone the most effective drug in status epilepticus

Dr. Ismail J Namazi, Dr. Archita Patil and Dr. Anuradha Deotale

Abstract

Background- Intractable status epilepticus not responding to conventional pharmacotherapy is a medical emergency. Deeper suppression of cortical activity, documented electrocerebral silence and titrable length of time during which such electrocerebral silence can be maintained made thiopentone the ideal drug for initial management of status epilepticus. A long lasting anti epileptic drug regimen can be established during thiopentone induced burst suppression; which then can be tapered and discontinued with minimal chances of recurrence. We report a case of viral encephalitis in coma with status epilepticus who was also a known case of Duchene muscular dystrophy. He was also on ventilatory support. When all other antiepileptic drugs were ineffective, Thiopentone sodium infusion was started and the seizures were controlled. Thiopentone sodium is the oldest drug yet it is the most effective treatment in status epilepticus in ICU setting with mechanical ventilation. It reduces the relapse rate and avoids long term morbidity and mortality with life threatening emergency. We were successfully able to manage this case with thiopentone infusion.

Keywords: Status epilepticus, thiopentone sodium, duchenne muscular dystrophy

1. Introduction

Status epilepticus (SE) is one of the major neurological emergencies with the incidence of about 20/1,00,000 for the Caucasian population. SE is defined as a continuous seizure activity without regaining of consciousness lasting for more than 5 min as a part of an operational definition put forth within the past few years [1]

2. Case History: A 9 yr old male patient 22kg, came with chief complaints of high grade, intermittent fever, vomiting and convulsion (uprolling of eyes with loss of consciousness without any tonic or clonic muscle contraction) since 1 day. He was a k/c/o Duchene muscular dystrophy since 4 yrs and was on tab levocarnitine. Systemic examination and other investigations were within normal limits. CSF examination and CT brain revealed no abnormality. EEG findings suggested status epilepticus. Specific test like P. vivax was negative. P. falciparum was weakly positive. Dengue was negative. When all the investigations were normal, the diagnosis of exclusion was Viral Encephalitis. The Child was having recurrent seizures without full recovery between seizures for more than 5mins. Initially IV Lorazepam 0.1 mg/kg over ½ - 1 min was given then repeated after 5min. when it was found to be ineffective, we started with IV Phenytoin 10 mg/kg in normal saline over 20 min. when phenytoin was also not controlling seizures Endotracheal intubation was done to secure the airway and IV Midazolam 0.1 mg/kg loading dose over 2-3 min infusion was started at 120 ug/kg/hour. Finally when all the drugs failed to show adequate response IV Thiopentone sodium started with 3mg/kg bolus followed by additional bolus of 1 mg/kg every 3-5 min until a clinical response was achieved and then infusion was started at 3 mg/kg/hr for 24 hours. The child was gradually weaned of the mechanical ventilation and extubated the following day.

3. Discussion

Status epilepticus (SE) is an epileptic seizure of greater than five minutes or more than one seizure within a five-minute period without the person returning to normal between them. Previous definitions used a 30-minute time limit. The seizures can either be of the tonic-clonic type with a regular pattern of contraction and extension of the arms and legs or of types that do not involve contractions such as absence seizures or complex partial seizures. Status epilepticus is a life-threatening medical emergency particularly if treatment is delayed [1]. The optimal protocol for management of SE begins with a benzodiazepine, either lorazepam or diazepam. In the United States, lorazepam is the drug of choice in patients with intravenous or intraosseous access. Lorazepam (0.05-0.1 mg/kg IV or IO slowly infused over 2-5 min) has rapid onset and long duration of anticonvulsant action [2, 3]. It is preferred over diazepam, although one review found lorazepam and diazepam equally effective for controlling SE in children.

If an IV line cannot be established rapidly in a child who is too old for IO infusion, use per rectum (PR) diazepam. Midazolam (0.1-0.2 mg/kg IM) is the most effective choice when IV or IO access is not immediately available, but IM midazolam is not approved by the US Food and Drug Administration (FDA) for that indication [3].

Midazolam is the only benzodiazepine that can be administered safely intramuscularly while providing rapid onset equivalent to that of intravenous agents and a moderate duration of action. Intranasal midazolam may also be an option in children with prolonged seizure without an IV access.

In one study, no difference in efficacy was observed between caregiver-administered intranasal midazolam and rectal diazepam for terminating sustained seizures (ie, >5 minutes) in children at home. Caregiver's satisfaction was higher with the inhaled midazolam (easier to administer) and the median time from medication administration to seizure cessation was 1.3 minutes less for inhaled midazolam compared with rectal diazepam [3].

If the seizures cease, no further drugs are immediately necessary. The etiology of SE epilepticus should then be investigated.

If benzodiazepine therapy proves ineffective, IV or IO fosphenytoin or phenytoin is used. These agents are effective for most idiopathic generalized seizures and for posttraumatic, focal, or psychomotor SE. Fosphenytoin offers the advantage of a potentially rapid rate of administration with less risk of venous irritation and vascular compromise of the infused limb (eg, purple-glove syndrome).

The loading dose of phenytoin is 20 mg/kg IV or IO; for fosphenytoin, it is 20 mg/kg PE IV or IO [2, 3]. A full loading dose should be delivered unless the patient is known to have a current therapeutic level. With phenytoin, use a slow rate of infusion (< 1 mg/kg/min or < 50 mg/min) to avoid hypotension or cardiac arrhythmias. Although respiratory depression that requires endotracheal intubation may occur at any time during treatment of GTCSE, it is especially common during administration of phenytoin/fosphenytoin [3].

If fosphenytoin or phenytoin is not effective, IV Thiopentone sodium started with 3mg/kg bolus followed by additional bolus of 1 mg/kg every 3-5 min until a clinical response was achieved and then infusion was started at 3 mg/kg/hr for 24 hours and then continuously tapered. Hence thiopentone

sodium proved to be the most effective and reliable drug in achieving adequate response for status epilepticus.

4. Conclusion

Thiopentone sodium is the oldest drug yet it is the most effective treatment in status epilepticus in ICU setting with mechanical ventilation. It reduces the replace rate and avoid long term morbidity and mortality with life threatening emergency.

5. References

1. Robert kliegman, Bonita Stanton, Nina Felice. Nelson Textbook of Pediatrics.
2. James Lee, Linda Huh, Paul korn, Kevin Farrell. Guideline for the management of convulsive status epilepticus in infant and children.
3. Rajesh Ramachandran nair, Paediatric Status Epilepticus Chief. Updated. 2014.
4. Epilepsy in boys with duchenne muscular dystrophy, journal of research in medical sciences in. 2004.
5. Angus Wilfong, Management of convulsive status epilepticus in children.