Research Paper Medical Science

Study of the Clinical Profile of Neonatal Seizures

Dr . Manoj kumar B | Junior resident , Dept of Pediatrics , GMC, Kota ,Rajasthan

Dr . A. L. Bairwa | Professor , Dept of Pediatrics , GMC , Kota, Rajasthan.

ABSTRACT

Neonatal seizures are clinically significant because very few are idiopathic. Further investigation leading to prompt diagnosis of the underlying condition as well as associated biochemical abnormality is important for specific treatment. Recognition of hypomagnesemia and hypocalcaemia is important for therapeutic implications.

KEYWORDS

INTRODUCTION :

Neonatal seizures may be symptomatic of an underlying disorder or due to a primary epileptic condition, in neonates vast majority of seizures are symptomatic of underlying disorder(1). Among various etiologies ,birth asphyxia ,neonatal meningitis and metabolic abnormalities are the common etiologies of neonatal seizures. Antepartum and intrapartum history is significant in the occurrence of neonatal seizures, factors to be significant for seizures occurring in term infants within the first 3 days of birth: nulliparity, hydramnios, post-term pregnancy, oxytocin augmentation of labor, fetal distress, prolonged second stage of labor, emergency cesarean section, assisted vaginal delivery, low Apgar score, resuscitation at delivery, and subsequent ventilatory support(2,3).

TYPES:

Subtle seizures are the commonest type noted accounting for 50% of all seizures , more common in preterm babies . Other types are MFC ,focalclonic , tonic and myoclonic .

Age of onset of seizures
1st day: HIE , cerebral contusion, first day hypocalcemia , pyridoxine def etc.

1-3days: ICH, hypoglycemia , IEM etc.
4-7days: Meningitis , TORCH infections ,tetany etc.
1-4 weeks:Late onset hypocalcemia , KI , sepsis etc.(4)

AIMS & OBJECTIVES :

TO STUDY :
1. Aetiology of neonatal seizures
2. Onset of neonatal seizures
3. Types of neonatal seizures

METHODOLOGY :

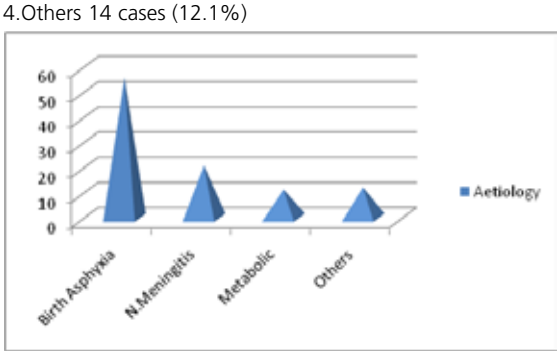
- The present study included 115 neonates presenting with seizures admitted to NICU of J.K lon hospital , GMC , Kota , from Aug 2012 to Feb 2013.
- Detailed antenatal , natal & postnatal history were taken ,examination of the baby was done and HIE staged according to modified sarnat staging .The present study included 115 neonates presenting with seizures admitted to NICU of J.K lon hospital , GMC , Kota , from Aug 2012 to Feb 2013.
- Then relevant investigations including biochemical parameters were done and aetiology of neonatal seizures and their associated biochemical abnormalities were diagnosed.

RESULT:

- In present study , out of 115 neonates studied, 105 were full term of which 94 (81.7%) were AGA and 11 (9.6%) were SGA , 9 (7.8%) preterm and 1 (0.9%) post term.
- The male : female ratio was 1.67:1
- 113 (98.3%) were hospital delivered and 104 (90.4%) were spontaneous vaginal deliveries.
- 75 (65.2%) were of birth weight >2.5 kg.

AETIOLOGY OF NEONATAL SEIZURES:

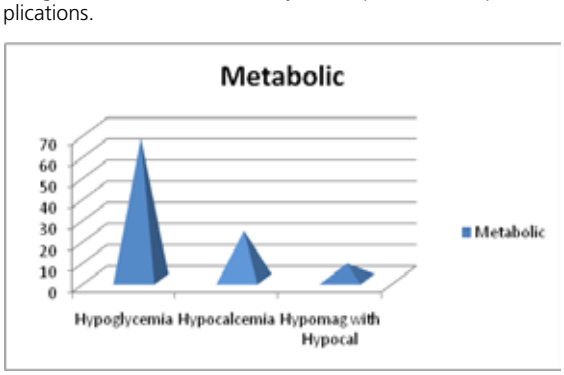
1.Birth asphyxia 64 cases (55.7%)
2.Neonatal meningitis 24 cases (20.9%)
3.Metabolic 13 cases (11.3%)
4.Others 14 cases (12.1%)



Metabolic causes:13 cases

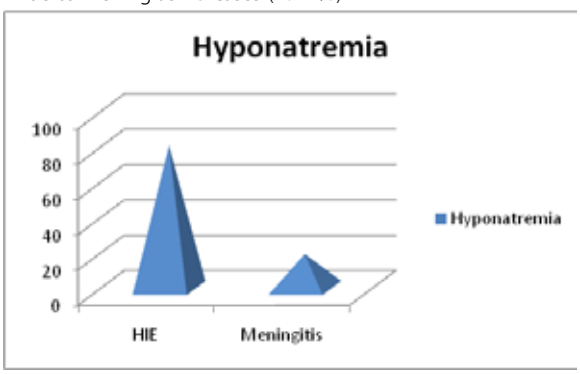
1.Hypoglycaemia 9 (66.7%)
2.Hypocalcaemia 3 (23.07%)
3.Hypomagnesemia with hypocalcaemia 1 (7.6%)

* Hypoglycaemia was present more in LBW babies (55.5%).
*Incidence of hypomagnesemia with hypocalcaemia is low but recognition of such abnormality has important therapeutic implications.

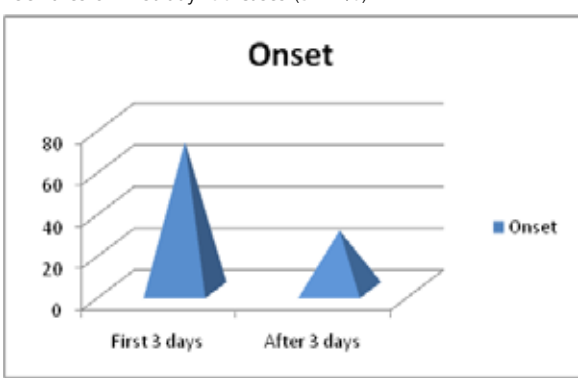


The most common biochemical abnormality noted in neonatal seizures was hyponatremia : 26 cases(22.6%).

*Due to HIE : 21 cases(80.7%)
*Due to meningitis : 5 cases (19.2%).

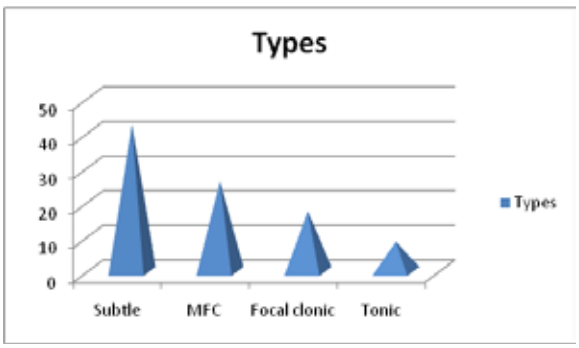


ONSET OF NEONATAL SEIZURES:
*Within first 3 days: 82 cases(71.3%)
*After 3 days: 33 cases (28.69%)
*Seizures on first day: 66 cases (57.4%)



TYPES OF NEONATAL SEIZURES:
1.Subtle : 49 cases(42.6%)
2.Multi focal clonic seizures : 30 cases (26.08%)
3.Focal clonic seizures :20 cases (17.39%)
4.Tonic seizures: 10 cases (8.6%).

*Most common type of seizure noted was subtle type accounting for 42.6% of the cases.



INTERPRETATION & CONCLUSION:

- The most common aetiology of neonatal seizures is HIE and onset is during first three days of life.
- Hypoglycaemia is more common metabolic disorder , more so in LBW babies.
- Hyponatremia is the most common biochemical abnormality associated with non metabolic seizures mainly HIE.
- Subtle seizures are the most common type of neonatal seizures.

REFERENCES

1 . John P Cloherty, Manual of Neonatal Care , 7th Edition . | 2. Patterson CA, Graves WL, Bugg G, et al. Antenatal and intrapartum factors associated with the occurrence of seizures in term infant. Obstet Gynecol1989;74:361–5. | 3 . Minchom P, Niswander K, Chalmers I, et al. Antecedents and outcome of very early neonatal seizures in infants born at or after term. Br J Obstet Gynaecol1987;94:431–9. | 4 .Meharban Singh , Care of the Newborn , 7th Edition .