Summary and conclusion

Neonatal seizures are a risk factor that markedly increases rate of long term morbidity and neonatal mortality and the presence of neonatal seizures is the predictor of long term physical and cognitive deficits.

The overall prognosis for survival in neonatal seizures is around 85% a significant improvement from earlier decades; unfortunately, the prognosis for long-term neurodevelopmental outcome remains largely unchanged. Specifically, an adverse outcome occurs in approximately 50% of cases, with sequelae such as mental retardation, motor dysfunction and seizures.

The range of long-term outcome being (i) the underlying etiology, (ii) electrographic features, and (iii) gestational age. Other useful predictors include the neonatal neurologic examination and neuroimaging finding.

This work was done to evaluate the clinical aspects of seizures in the neonatal intensive care units as regard the incidence, the clinical types, etiology and time of onset of seizure.

This study included cases complaining of neonatal convulsions in the period between July 2009 till June 2010 attending the neonatal intensive care unit at Benha children hospital ,sixty three cases included in the study, nineteen cases were males (30.1%) and forty four cases were females (69.9%) with mean age five days.

A sheet for each of the studied cases including the following:

I-Complete history taking:-personal, prenatal, natal and postnatal

II- Complete physical examination:-General and local

III-Imaging:-

Trans-cranial ultrasound and CT.

IV- Lab investigations:-

All studied neonates were subjected to the following:

A-Complete blood count.

B-Serum Electrolytes (Na, K, Ca, Mg and glucose).

C-C- reactive protein.

D- Blood culture.

E-CSF culture.

The data obtained from the 63 cases are:

63 cases (7%) with neonatal convulsion from the total cases admitted to neonatal ICU (NICU) 902(93%).

19 cases were males (30.1%) and 44 cases ware Females (69.9%).

24 cases were delivered by cesarean section (CS) (38.1%) and 39 cases by normal vaginal delivery (61.9%).

18 cases were preterm (28.6%) and 45 cases were full term (71.7%).

29 cases were appropriate for gestational age (46.1%), and 15 cases were small for gestational age (23.8%) and 19 cases were large for gestational age (30.1%).

Maternal diseases of the studied cases 1 case(1.6%) had CMV infection , 1 case(1.6%) had cervical erosion, 1 case(1.6%) had rupture uterus,1 case(1.6%) had antipartum hemorrhage,4cases(6.3%) had pre-eclampsia,8 cases(12.7%) had premature rupture of membran,31cases(49.2%) had respiratory distress,32 cases(50.8%) had delayed first cry,17 cases(27%) had weak neonatal reflexses and 4 cases(6.3%) had hypertonia.

13 cases (20.6%) presented with seizures in the first day of life and 50 cases (79.4%) after the first day.

Seizures varied in type: 39 cases(61.9%) presented with generalized seizures,7cases (11.1%)presented with focal seizures and 17 cases (27%) presented with subtle seizures.

There were a significant increase in total leukocyte count(TLC) in 36 cases (57%),but there were a significant decrease in hemoglobin(Hb) level in 8 cases (12.6%) , decrease in platelets count in 20 cases (31.7%) and positive CRP in 29 cases(46%) which are criteria of neonatal sepsis which contribute in etiology of neonatal seizures

There were significant serum electrolytes changes where 36 cases (57.2%) had low calcium serum level, 17 cases (27%) had low sodium serum level but 18 cases (28.6%) had significant increase in potassium serum level,43 cases(68.3%) had abnormal serum glucose and all cases had normal magnesium serum level.

There were 6 cases (9.5%) from total cases gave positive CSF culture and 10 cases (15.9%) gave positive results for blood culture from total cases.

Cranial ultrasonography was carried out to all cases .Where 31 cases (49.2%) were found to have a normal cranial ultrasound while 32 cases (50.8%) had abnormal findings in the form of:

1- Hypoxic changes in 18 cases(28.6%)
2- Arnold Chiari and Dandy Walker syndromes in 2 cases (3.2%)
3- Intraventricular and subdural hemorrhage in 7 cases (11.1%).
4- Brain edema in 5 cases (7.9%)
5- Brain atrophy in 2 cases (3.2%)

The distribution of cases according to etiology of seizures where we found that the most common causes of neonatal seizures was hypoxia (50.8%), followed by neonatal sepsis (31.7%), followed by metabolic and electrolyte disturbance (9.6%) (2 of them are metabolic) followed by ICH (4.7%), while the least common causes of neonatal seizures was syndromes (3.2%).

The distribution of cases according to commonest etiology, the hypoxia was the commonest etiology in full term, seizure in 1St day, seizure >1St day, N.V.D and C.S while IVH was the commonest etiology in preterm.