CLINICAL PROFILE OF NEUROLOGICAL DISORDERS IN CHILDREN

M.N. Islam[1], S.M.S.B. Tabib[2], M.M. Rahman[3]

Abstract :

A study was done on 110 children in the age group of 1 month to 12 years admitted with neurological problems in the Deptt of Paediatrics, IPGMR, Dhaka from September 1993d to August 1994. The aim of the study was to find out neurological disorders of children and to investigate the quality of neurodiagnostic services presently available. This 110 neurological cases comprised of 8.9%d of the total admission during this period. Of the 110 patients 69.10% (76) patients were male and 30.90% (34) female with a male-female ratio of 2.23% : 1. 50% (55)d of the patients were under two years of age. Majority of the neurologicald disorders wered meningitis (24.55%) and cerebral palsy (21.91%). Febrile convuslsion was present in 15 patients (13.64%). Other neurological problems were Encephalitis (7.27%), Epilepsy (8.81%), Hydrocephalus (3.36%). Guillain-Barre syndrome (5.45%), Brain Tumors 3.65%), Post Polio Paresis (3.65%), Cerebral Infaction (1.82% and others. Among 27 children with meningitis 11 cases were pyogenic, 12 cases tubercular and 4 cases were aseptic. Of the 23 cerebral palsy children 6 were due to brith asphyxia and 6 were post meningitis and in the rest 11 the cause could not be acertained. CT scan of the brain was effectived method of investigation to determine the patholocal lesions. Only one patient (0.9%) suffering from cerebellar hemorrhage expired among these 110 patients. This study emphasized the need for a comprehensive, preventive, better neurodiagnostic service and timely management of neurological cases.

Introduction :

Neurological problems in children are very significant like other problems. They are the most common cause for referral to a tertiary care hospital or Paediatric neurology practice[1]. Developmental Paediatrics and child neurology are well established specialities of Paediatrics in development countries[2]. In the less development countries (LDCS) the main focus for the past decades has been on more acute easily treatable conditions with high fatality[3,4]. Yet epidemiological studies show that the Prevalence of childhood disability in Bangladesh ranges from 2-8% of Paediatric population[5] and that the prevalence of specific neurological problems such as seizures are also very significant[6]. Neurological problems account for 10% of the total reason for attendance in the out patient department[7]. Earlier the treatment started,

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better the development out comes of neuroligical problems are expected. Better neurodiagnostic servies are also required of early diagnosis and treatment[1]. But yet no neuropaediatric unit exists in any major hospitals of the country. The aims of the study were to find but the clinical profile of neurological disorders of children; to investigate the quality of neurodiagnostic services presently available and to see the immediate outcome.

Materials and Method :

110 children in the age group of 1 month to 12 years admitted with neurological problems in the Department of Paediatrics IPGMR, Dhaka from September 1993 to August 1994 were the study population. Every child was seen by the first author. History was taken carefully and thoroughly. Neurodevelopmental assessment included elaborate Pre, Peri and Postnatal history, developmental milestones, major illnesses and immunization. Family history included the history of consanguinity, sibling death, affected siblings and other family members.

Physical examination was done meticulously on all children including neurodevelopmental examination an examination of special sensory functions lile vision, hearing and speech. Their clinical datas were collected in a prospective way on a specially designed proforma. Appropiate investigations were done where required and subject to availability of resources. Each cases were managed as for as possible and were followed up to find out short hospital out come.

Results :

Neurological patients comprising 8.9% out of total admission has been depicted in Table I. Table II shows that over two thirds of the children were male. Most (over 50%) were under two years of age.

Neurological disorders of the children is presented in table III. 24.55% patients had meningities and large proportion of patients presented with some form of gross motor impairment i.e cerebral palsy (CP) Among the maningitis cases pyogenic and tubercular maningitis were equally predominent (table IV). Amongst the CP children most of the cases presented with spastic quadriplegia and about 50% cases were idiopathic in origin followed by perinatal asphyxia and post meningitis. Cerebral palsy cases had associated problems such as seizures, malnutrition, feeding difficulties and recurrent infections. Out of 15 ebrile convulsion patient 50% had family history & nature of convulsion was generalized in all case. Of 9 children with epilepsy 7 cases had generalized seizure and 2 cases with partial seizure. A limited number of investigations were conducted in the study of children (table VI). CT scan of the brain was efective method of investigation to determine pathological lesion. Only one patient (0.9%) suffering from cerebellar haemorrhage expired (table VII).

Table-I

Percentage of Neurological Cases

Total patients admitted	1236
Number of Neurological patients	110
Neurological patients	8.9%

Table-II

Age and sex Distribution of Studied Children

Age in years	Male	Female	Total
02	42	13	55
2-4	11	11	22
4-6	3	3	6
6-8	6	2	8
8-10	7	1	8
10-12	7	4	11
Total (Percentage)	76 (67.10%^) Male :	34 (30.90%) Female=2.23:1	

Table-III

Neurological Disorders of Studied Children (n=110)

Neurological Problems	Number of cases	Percentage
Meningitis	27	24.55
Celebral Palsy	23	20.91
Febrile convulsion	15	13.64
Epilepsy	9	8.18
Encephalitis	8	7.27
Hydrocephalus	7	6.36
Guillain Barre Syndrome	6	5.45
Brain tumour	4	3.65
Post Polioparesis	4	3.65
Cerebral infarction	2	1.82
Cerebral abscess	1	0.91
Cerebellar haemorrhage	1	0.91
Tuberous scerosis	1	0.91
Epidural Absces	1	0.91
Wilson's disease	1	0.91
Total	110	100

Table-IV

Types of Meningitis Cases (N=27)

Types	Number	Percentage
Pyrogenic	11	40.74
Tubercular	12	44.44
Aseptic	4	14.84
Total	27	100

Table-V

Classification of Cerebral Palsy Cases (N=23)

A.	Types of cerebral palsy	Number	%
	Spastic quadriplegia	20	86.95
	Spastic diplegia	02	8.70
	Ataxic	01	4.35
B.	Aetiology		
	Perinatal Asphyxia	06	26.09
	Post Meningitis	06	26.09
	Idiopathic	11	47.84

Table-VI

Specific inVestigations Conducted on the Children with Neurological Problems

Investigations	Positive Finding	Negative finding	Total
CT Scan	27	3	30
Brain Ultrasonography	10	4	14
Brain Scan	2	7	9
EEG	6	1	7
CSF examination	25	11	36
Brain Biopsy	2	0	2
Myelography	0	1	1
Urine for copper and serum ceruloplasmin	1	0	1
Total	73	27	100

Table-VI

Mortality Rate	
Total No. of Patients :	110
Total Death :	1
Mortality rate :	0.9%

Discussion:

The study analysed a profile of neurologically impaired children admitted in to a tertiary referral hospital in Bangladesh. Epidemiological study of childhood disability in Bangladesh have shown that both sexes are equally screened within the population for impairments of vision hearing cognitive, motor functions and epilepsy[8]. This study shows male Predominence. Probably this reflects the social phenomenon of giving more importance to the male child in availing medical service. Majority of the neurological disorders were meningits and cerebral palsy. Better developmental outcomes of neurological impairments are expected the earlier treatment is started[9]. Nurturing positive attitudes after allaying fears of the parents

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especially mothers improved childrens development[10]. In this study most of the cerebral palsy cases were severely disabled with spastic quadriplegia. In a study U. Sharma found 83% of spastic cerebral palsy, 8% hypotinic, 4% athetiod & rigidity in 2% & ataxia in one case[11]. In our study the actiology of cerebral palsy could not be ascertained in 47.84% cases. But in study of U. Sharma birth asphyxia (43%), Prematurity (25%) and low birth weight were the predominent cause of cerebral palsy[11]. In a study by Khatoon SA, birth asphyxia contributed 14.6% cerebral palsy s long term sequele[12]. So antenatal, natal and obstetric service must be reinforced. Management of these handicapped children should involve physical & speech therapy session, mother child observation session, play therapy to improve cognitive skills and other multi desciplinary approach. Amongst the meningitis cases in this study quite a large number of cases were tubercular meningits (TBM). TBM have significance as markers of the size infections pool in the community[13]. Berman S at al 14 present that 80% of TBM patients were seen to by younger than 5 years of age. Neurodiagnostic services are invaluable to the clinician. It requires facilities in various fields such as neurophysiology, neurorabiology and neurochemistry. These technical facilities are not fully available in our country. Brain ultrasound was carried out in most cases. But computerised Axial Tomography (CT scan) yielded the best results in terms of positive finding. This is consistent with other studies[15,16].

Conclusion :

This study emphasized the need for a comprehensive, preventive, better neurodiagnostic service and timely management of neurological cases. Future development need to focus on developing expertise in all the branches of neurology as well as developing appropriate technology.

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In all snakes the teeth point throatwards. Once a snake has gripped its prey, it must swallow it entire.

A common garden snail has fourteen thousand one hundred and seventy-five teeth.

The Black Swan, with its coral-red bill, is a native of Australia.

The neon tube, used extensively for electric signs, does not require a filament, but neon gas from which all air has been excluded.