

Frequency of Type of Cerebral Palsy in Children Reporting at A Tertiary Care Hospital

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Abstract:

Background: CP is a static encephalopathy caused by Genetic, metabolic, ischemic, infectious and other acquired diseases in children. It is a disorder of movement and posture causing activity limitation that attributes to non progressive disturbances in the development of fetal or infant brain. CP is a most common motor disorder and the data from centre for disease control and prevention in indicates the incidence is 3.6 per 1000 live births and the ratio of M : F is 1.4 : 1.

Objectives: To assess the frequency and Kinds of cerebral palsy in children reported at Neuro psychiatry and Rehabilitation out patient department, National Institute of Child Health (NICH) Karachi.

Study Design: Descriptive hospital based study.

Duration of study: January 2013 to December 2013

Sample size: All new cases presented with abnormalities of tone, movement and posture during this study.

Sampling technique: Random sampling method.

Results: One hundred and thirty-five patients were enrolled in this study. Out of them 65% (n=88) were males and 35% (n=47) were females. Most of children 88.9% (n=120) reported were in age group ranges between 1-5 years. Nearly all patients presented with delayed milestone. In (5.9%, n=8) cases there is history of taking medicines by their mothers and 8.8% n=12 mothers were diabetics and hypertensive during pregnancy. Regarding types of cerebral palsy, 88% n=119 were spastic type, 4.5% (n=6) dyskinesia and 0.74% (n=1) Ataxic type of cerebral palsy. Among them spastic quadriplegic was on top (62.2% n=84). Birth asphyxia (47.46%, n=64) was the most common factor and was suggestive of etiological factor in this study.

Conclusion: High frequency of spastic type of cerebral palsy was noted which could be prevented if proper antenatal care and timely management was offered.

Keywords: Cerebral palsy, Quadriplegia, children hospital

I. Introduction

Cerebral Palsy is a motor deficit, which is non progressive but permanent condition caused by ante natal, natal and post natal events. These events are secondary to anoxia / hypoxia maternal infections, toxemia, prolonged and difficult labor, prematurity and low birth weight. The causes of acquired cerebral palsy are meningitis, encephalitis, cerebro vascular accidents, seizures and brain injury¹. Cerebral Palsy exhibits complication such as delayed mile stone, abnormal muscles and motor control, reflex abnormalities, poor postural control, muscle imbalance, cognitive skills problems hearing, sensory, visual, mental intellectual skill also impaired². Cerebral palsy is disorder of movement & posture in children.³ The prevalence of CP is considered 2.5/1000 live births⁴. Cerebral palsy is the leading cause responsible for impaired motor function in children. The prevalence rate is 1-2 /1000 live births seen in various cohort studies. The prevalence increases with the decreasing gestation age. The prevalence is decrease in the cases of CP child after the introduction of Neonatal intensive case is reported in various literatures in the past.⁵ In the developing countries Like Pakistan & India, prevalence tends to be in a similar range⁶⁻⁷. In most of our patients no single cause but multiple contributing factor leading to CP in children are reported. The common factors leading to CP are birth asphyxia, birth trauma, meningitis and encephalitis⁸⁻⁹. In some cases, genetic factor can cause CP in children¹⁰. In 30% cases no cause can be found¹¹.

II. Patients And Methods

The study was conducted at the department of Neuron-psychiatry and Rehabilitation centre, National Institute of Child Health, (NICH), Karachi from 1st January 2013 to 30 December 2013. An Ethical clearance was obtained from IERB. An informed written consent was obtained from parents'/care seekers, explaining them purpose and nature of study. Reassurance was also given regarding the confidentiality of provided information. As per given criteria, all new patients who presented with abnormalities of tone, movements and postures ranging from 1 to 15 years of age of either gender were included. Patients associated with hepatic

splenomegaly, degenerative brain disease having myopathies and neuropathies were excluded. A semi structured proforma consisting of demographic data, age gender, source of referral and relationship with the accompanying person was recorded. In addition, complication during pregnancy and delivery, vaccination status, developmental mile stone, neurological and developmental findings with associated problem were also noted. Simple random sampling procedure was used out for data collection. Data feeding and analysis was accomplished by using computer SPSS (Statistical Package for Social science) version – 17. As it is a descriptive study, so results are presented in frequencies and percentages only. However, mean and standard deviation (SD) is calculated for quantitative variables.

III. Results

One hundred and thirty-five patients were enrolled in this study. Out of them 65% (n=88) were males and 35% (n=47) were females. Male to female ratio was 1.87:1(Fig: I). Most of children 88.9% (n=120) reported were in age group ranges between 1-5 years. Majority of Cerebral palsy children born in hospital (71.85%, n=97), full term pregnancy (85.2%, n=115) and Vaccination (89.63%, n=121) Ref. Table1. Nearly all patients presented with delayed milestone. In (5.9%, n=8) cases there is history of taking medicines by their mothers and 8.8% n=12 mothers were diabetics and hypertensive during pregnancy. Regarding types of cerebral palsy, 88% n=119 were spastic, 4.5% (n=6) Dyskinetic and 0.74 (n=1) Ataxic. Six percent (n=9) of cases were not classified. Among them spastic quadriplegic was on top (62.2% n=84). Rests were diplegia, paraplegic hemiplegia etc (Table II).

Birth asphyxia (47.46%, n=64) was the most common factor and was suggestive of etiology factor in this study. Rests include kernicterus (16.3%, n=22), prematurity and low birth weight (22.97%, n=31) and meningoencephalitis (7.41%, n=10) etc. Seizure disorders (32.59%, n=46) were the most common associated clinical problem followed by contractures (25.59%, n=34) and behavioral problems (16.3%, n=22). Rests include bony abnormalities, visual and hearing problems etc. Majority of patient (40.74%, n=55) received physical therapy. Cerebral palsy children also received neurological, psychiatric, occupational and speech therapy.

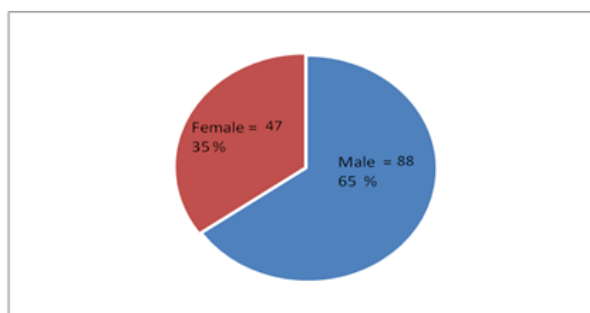


Table I Demographic Characteristics of patients associated with C.P (n=135)

SNo	Characteristics	Category	Number	Percentage
1	Gender	Male	88	65
		Female	47	35
2	Age	1-5	120	88.9
		6-10	13	9.6
		11-15	02	1.5
3	Education	Middle	24	17.8
		Elementary	61	45.2
		None	50	37.0
4	Place of birth	Karachi	92	68.2
		Out side Karachi	43	31.8
5	Source of referral	Self	42	31.1
		Doctor	60	44.4
		Relative	25	18.5
		Other	08	6.0
6	Accompanying person	Father	20	14.82
		Mother	60	44.44
		Both	45	33.33
		Other	10	7.41
7	Place of delivery	Home	38	28.15
		Hospital	97	71.85
8	Vaccination	Complete	121	89.63
		Incomplete	10	7.41
		None	04	2.96

Table II Neurological findings (type of cerebral patients)

Spastic	Number	Percent
Diplegia	22	16.3%
Paraplegia	07	5.2%
Hemiplegia	06	4.4%
Quadriplegia	84	62.2%
Dystonic	04	2.96%
choreoathetoid	02	1.48%
Ataxia	01	0.7%

IV. Discussion

This descriptive study represents the profile of the patients having cerebral palsies reported at department of Neuro-Psychiatry and Rehabilitation of tertiary care children hospital over a period of one year. The finding of our study suggest that majority of cerebral palsy was spastic type. A similar study conducted at department of pediatrics of tertiary care hospital Faisalabad also reported high percentage of spastic type of cerebral palsy while another study revealed that 33% of children had spastic unilateral and 49% spastic bilateral type of cerebral palsies⁶⁻⁹. Birth asphyxia was the most common etiological factor which is in accordance to previous study. It is usually associated with maternal hypertension, diabetes mellitus and prolonged labor. Good antenatal care and timely management may reduce the chance of cerebral palsy due to asphyxia.¹⁰⁻¹¹ Goals and outcomes to improve endurance including muscle power and cardio respiratory fitness exercise may be discouraged for patients with spastic CP that causes increase in spasticity and abnormal movement's patterns. Encourage maximizing gross motor functional level. Imbalance of tone across joints may cause contractures and deformities of hip Flexors, adductors, internal rotators, knee flexors and ankle plantar flexors in lower limbs and in upper limbs may be scapular retractors, glenohumeral extensors and adductors elbow flexors, forearm pronators. It is also observed that oral motor problems also seen in spastic CP.¹²

In the current study, seizure disorders, contractures and behavioral disturbances were found associated with cerebral palsy. All these disorders further complicate the primary illness. Hence, should be properly assessed and managed accordingly. Majority of patients received neurological, psychiatric, physiotherapy occupational therapy etc reflecting the importance of multidisciplinary team involvement in the management of cerebralpalsy.

V. Conclusion

High frequency of spastic type of cerebral palsy was noted which could be prevented if proper antenatal care and timely management was offered.

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