AUCTORES
Globalize your Research

Journal of Women Health Care and Issues

Suhair A.Osman *

Open Access

Research Article

Cerebral Palsy among Children Admitted to Port Sudan Paediatric Hospitals from 10th of June -10th of October/2017: Prevalence, Causes, Risk Factors, Pattern, and, Burden

Mawada A.Mohamed [2] , Doaa Y. Ali [2], Nihad T. Abdalaziz [2], Suhair A. Osman [1*]

[1] Professor of paediatrics, Red Sea University, Consultant pediatrician and Neonatologis, Port Sudan children hospital and Sea Ports Cooperation Hospital, Sudan

[2] MBBS, Red Sea University/ Sudan

***Corresponding Author:** Suhair A. Osman, professor of paediatrics, Red Sea University, Consultant pediatrician and Neonatologist, Port Sudan children hospital and Sea Ports Cooperation hospital, Sudan.

Received date: March 13, 2023; **Accepted date:** March 28, 2023; **Published date:** April 06, 2023

Citation: Mawada A. Mohamed, Doaa Y. Ali, Nihad T. Abdalaziz, Suhair A. Osman (2023), Cerebral Palsy among Children Admitted to Port Sudan Paediatric Hospitals from 10th of June -10th of October/2017: Prevalence, Causes, Risk Factors, Pattern, and, Burden, *J. Women Health Care and Issues.* 6(3); DOI:10.31579/2642-9756/146

Abstract

Background: the observed incidence of cerebral palsy (CP) in Port Sudan is large, but there is no definite statistics. There is observation that the first-born child is the most at risk for birth asphyxia and CP, as a result of allowing primigravida laboring for long time without timely interference, plus the lack of appropriate fetal monitoring tools in this territory.

Objectives: to know the prevalence, causes, risk factors, pattern and burden of Cerebral Palsy among children admitted to hospitals during the study period.

Method: This is a prospective, longitudinal, hospital- based study in Port Sudan paediatric Hospitals from 10th June to 10th October/2017.

Inclusion criteria: all admitted CP cases due to birth asphyxia, aging 1 month to 16 years were included.

Exclusion criteria: all syndromic children or those with psychomotor retardation due to other diseases, and post traumatic nervous system defects were excluded from our study. Data were collected through a structured questionnaire, and analyzed manually.

Results: 60 children were identified as CP. The most prevalent type is Spastic quadriplegic CP (86.6%), more in males (61.6%). In 35% the duration of labor was more than 24 hours. Most of them were term (81.7%). Most of pregnancies (76.6%) were uneventful. In 71.6% the disease affected the mother social activity, while in 6.6% the disease affected the father work (over time work), in 8.3% of cases the parents were divorced. 36.% declared big financial burden, and in (6.6%) there were negligence of other children. The most common risk factor is primigravida with prolonged labor (21.7%)

Key words: chromosomal analysis; recurrent pregnancy loss; pregnancy rate ; pregnancy tissue

Introduction

Cerebral palsy (CP), a common chronic neurological disorder in children, is defined as a static non- progressive disorders of the brain, affecting movem ent, posture, and co-ordination, as a result of injury to the immature brain [1]. It is characterized by inability to normally control motor functions and it i s potentially affecting the overall development of the child. 80% of cases ca used by prenatal condition such as TORCH infection, 10% due to perinatal causes like birth asphyxia and 10% due to post natal causes such as meningi tis [2].

Incidence of CP in developed countries is around 2.5 per 1000 live birth; a nd it is variable in other countries, were in the developing countries no defin ite statistics but it is expected to be more than in developed countries [3]

CP is characterized by inability to control motor functions and is potentially affects the overall developmental of the affected child. 80% of cases caused by prenatal condition such as TORCH infection, 10% due to natal causes lik e birth asphyxia and 10% due to post natal causes like meningitis [3]. Other risk factor associated with CP are multiple gestation, intrauterine growth res

triction, preeclampsia, meconium aspiration and perinatal hypoglycemia [4, 5].

Cp types can be identified on clinical bases, that is the tone and distribution of motor abnormalities. These types are spastic CP is the most common typ e of CP (80%), and classified into three subtypes like :

- Spastic diplegic: affect the lower limbs more than upper limbs
- Spastic hemiplegic: affect one side of the body, with the arms are often involved more than the legs.
- Spastic quadriplegic: affecting all four extremities.

The econd common type is the Dyskinetic /hyperkinetic (choreoathetoid) CP, in this type the patient has excessive, involuntary movements characterized by a combination of rapid, dance-like contractions of muscle. The third type is the Dystonic CP, the patient has involuntary, sustained muscle contractions causing twisting, repetitive movements. Theforth type is Ataxic CP, where the patient has unsteadiness and incoordination of the movement, these patients are often hypotonic [6].

The evaluation of CP is based on medical history, physical examination, neuroimaging, and standardized developmental assessments. MRI is the preferred imaging and has an 86% to 89% sensitivity for detecting abnormal neuroanatomy of the motor areas of the brain [7].

A variety of complication can accompany CP, including intellectual disability in 50% of affected children, epilepsy occurs in 25% to 45%, orthopedic disorders in 30%, hearing and speech impairment occurs in 10% to 40%, and urologic problems in 30% to 60% of affected children [6]. Feeding difficulty occurs in all cases of quadriplegic CP.

Effective management and rehabilitation can improve the quality of life for the child and family, many medical options are available, including dantrolene, baclofen, botulinum toxin and phenol to relax the spastic muscles. Surgical options include placement of a baclofen pump, tendon releases, hip derotation surgery, and spinal fusion [8, 9]. Along these, physical therapy and the use of prothesis are an essential part of management to facilitate independence.

The prognosis of CP depends on the type. Most patient will survive into adulthood but most patient also die from aspiration pneumonia [10]. To the best of our knowledge, no research on CP was held in this territory, hence we wanted to sea the magnitude of this problem and the effect of prolonged labor in primigravida as a contributing cause for CP.

Methods

This is a prospective, longitudinal, hospital- based study, conducted in port Sudan paediatric hospitals in the period 10th of June to 10th of October/2017. All admitted CP cases aging 1 month to 16 years were included in this study, while all syndromic children or those with progressive psychomotor retardation due to inherited diseases, and post traumatic nervous system defects aquired after the age of 2 years, were excluded from our study. 60 cases with different type of CP in the age range of 1 month to 16 years, were encountered. Their data were collected through a structured questionnaire and analyzed manually by the research team.

Results

60 children were identified as CP. The most prevalent type is Spastic quadriplegic CP (86.6%), more in males (61.6%). In 35% the duration of labor was more than 24 hours. Most of them were term (81.7%). Most of pregnancies (76.6%) were uneventful. In 71.6% the disease affected the mother social activity by decreasing her exposure to her other family members and freinds, while in 6.6% the disease affected the father work where these fathers found themselves need to work as overtime or to search a second additional job to cover the expenses of treating their child with anticonvulsants and / or physiotherapy. Parents have got divorced in 8.3% of the cases. 36.% of parent(s) have declared that the presence of an affected child has created a big financial burden on them, and in (6.6%) there were negligence of other children as the parents time being consumed up by the chronically ill child (see table 3). The most common risk factor is primigravida with prolonged labor causing birth asphyxia (21.7%)

Most of the encountered cases were males (61.7%), and a significant number were the first – born ones (48.3) p-value < 0.045 (see table -1). Most of the encountered CP patients are between 1-5 years old (26:43.3%), between 5-9 years were also (43.3%), while between 10-16 represent (8: 13.3%). This may be due to the fact that the majority of CP child not survive to reach adolescence **(see table 1)**

The character	No (%)
males	37 (61.7)
First born	29 (48.3)
term	49 (81.7)
preterm	10 (16.7)
Post-term	1 (1.6)
Spastic CP	52 (86.7)
dyskinetic CP	5 (8.3)
ataxic	2 (3.7)
Mixed type	1 (1.7)

Table 1: Below Shows the Characters of CP Children

disease burden on the family	No (%)
Father works overtime	4 (6.6%)
Mother social activity limitation	43 (71.6%)
Divorce	5 (8.3%)
Negligence of other children	4 (6.7%)
Financial burden	22 (36.6%)

In most of pregnancies (76.7%), no medical event occurred during pregnancy (see table 2)

Table 2: Shows the event during pregnancy.

event	No (%)
uneventful	46 (76.7)
Antepartum haemorrhage	5 (8.3)
Maternal febrile illness	7 (11.7)
UTI	8 (13.3)
TOTAL	60 (100)

Table-3: Burden of the disease on the family:

Discussion

In this study we observed that (48.3%) of CP children were the first- born, indicated that babies of primigravidae are at higher risk to develop CP, due to lack of the maternal experience, and long duration of labor allowed for the primigravidae to deliver, as the general believe that primigravida needing longer time to deliver, a believe which delays appropriate, timely, intervention.

We also found that 81.7% of CP children were born at term, this is incongruent with what was found by Krishna M Goel and Devendra k Gupta, who reported that, half of all cases of CP are associated with preterm delivery.

In most of the cases in this study, mothers have had no events during pregnancy, indicating other causations of CP, which can't be explained on clinical bases. However, this is larger to what was found by Karen J Marcdante and Robert M Kliegman, as they reported that nearly 50% of children with CP have no identifiable risk factors.

In this study we have observed that the most common type of CP, is the spastic type 86.6%, a finding in agreement with to Karen J Marcdante and Robert M Kliegman who reported spastic CP as the most common form of CP (70%-80%) in their study.

lastly, the study revealed that the presence of a case with CP, can create a large burden on the family, financially and socially, and even affect family integrity due to strain of caring for a chronically affected child and absence of respite care in our country.

Conclusion

We conclude that CP is a significantly present disease in our country, and the main risk factor for a mother to bring a child with CP, is being primigravida laboring for more than 24 hours. This disease is also significantly shed its burden on the families.

Recommendation:

our main recommendation is to change the believe that primigravidae naturally needs longer time to deliver, which is giving inappropriate feeling of the staff to relax and delay timely intervention.

Acknowledgment: we are muchly indebted to all parent(s) and carers of all CP cases who shared their unrevealing informations in this study.

References:

1. Krishna M Goel & Devendra K Gupta. (2012),Cerebral palsy; Hutchison's Pediatrics 2nd edition. "Page 386-392"
2. www.medScap.com
3. Mohamed A Elkoumi . (2018), Cerebral palsy; Illustrated Baby Nelson General pediatrics " page 377"
4. McMichael G, Bainbridge MN, Haan E, Corbett M,Grander A, Thompson S, van Bon BW, van Eyk CL, Broadbent J, Reynolds C, O'Callaghan ME, Nguyen LS, Adelson DL, RussoR, Jhangiani S, Doddapaneni H, Muzny DM, Gibbs RS, Gecz J, Maclennan AH. (2015),Whole-exome sequencing points to considerable genetic heterogeneity of CP; Mol psychiatry;20(2):167-182.

5. van Eyk CL, Corbett MA, Maclennan AH. (2018) The emerging genetic landscape CP; (2018) Handb Clin Neurol. ;147:331-342.
6. Graham HK, Rosenbaum P, Paneh N, DanB, Lin Jp, Damiano DL, Becher JG, Gaebler-spira D, Colver A, Reddihough DS, Crompton KE, Lieberrl. (2016)Cerebral palsy; Nat Rev Dis Primers. Jan 07;2:15082.
7. Novak I, Morgan C, Adde L, Blackman J, Boyd RN, Brunstrom-Hernandez J, Cioni G, Damiano D, Darrah J, Eliasson AC, Thornton M, Walker K, Badawi N. Early, Accurate Diagnosis and Early Intervention in CP; advances in Diagnosis and Treatment. JAMA pediatr.2017 Sep 01;171(9):897-907.
8. Nahm NJ, Graham HK, Gormley ME, Georgiadis AG. (2018 0Management of hypertonia in CP; Curr Opin pediater. ;30(1):57-64.
9. Park TS, Dobbs MB, Cho J. (2018) Evidence Supporting Selective Dorsal Rhizotomy for Treatment of Spastic CP; Cureus. Oct 19;10(10):e3466.
10. Strauss D, Brook J, Rosenbloom L, Shavelle R. (2008), Life expectancy in CP:an update. Dev Med Child Neurol. Jul;50(7):487-493.
11. Karen J.Marcdante & Robert M.Kliegman.Cerebral palsy; (2015) Nelson Essentials Of pediatrics 7th edition "Page 35-36".

DOI:10.31579/2642-9756/146