Characteristics of cerebral palsy patient attended at CRP

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Abstract

Purpose: To explore the characteristics of cerebralpalsy patient attended at CRP. Objectives: To describe the antenatal, natal and postnatal characteristics of cerebral palsy patient. Methodology: The study design was cross-sectional study. Total 205 samples were selected through convenience sampling method for thi sstudy from Pediatric unit of Centre for the rehabilitation of the paralysed (CRP). Data was collected from face to face interview with semi-structured questionnaire. Descriptive statistics through using SPSS software version 20 was usedfor data analysis which focused through table, Barandpie chartetc. Results:It has found that spastic quadriplegiais the most common type of cerebral palsy and male child (71%) are more affected than female (29%). Majority of the patient came from rural area(57%) and the parents with low educational status.Moreover cerebral palsy is common in younger mother which was significant in test statistics.It was found that 48% delivery took place at home attended by untrained person (42%), history of birth asphyxia was present in around 67% cases which was common in home delivery (p=0.017). Besidethis 60% mother had suffered for prolonged labor which could influence birth asphyxia as well as cerebralpalsy. One third mother of cerebralpalsy patient did not get family support during their pregnancy to have a healthy baby. Conclusion: Illiteracy, younger age of mother, unavailability of health care facility to all, lack of awareness regarding pregnancy care, home delivery with untrained attendant could play as a contributing character to have cerebralpalsy. Finally, education, awareness about child disability and its prevention and women empowermentcan prevent thedevelopmentof cerebral palsyin long term.

Keywords:Cerebral palsy, pre-natal, natal, post natal characteristics of CP

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Introduction

Disability is an important developmental issue all over the world (Marell aetal, 2015). According to the World Health Organization (WHO)10% of totalpopulationin Bangladesh are disable , among them16.41% of total disabilities are child disability due to birth injury (Anwaret al., 2006) where Cerebral palsy is the most common condition that is responsible for the child disability(Rosenbaum et al., 2007). An estimated 20% of infants are born prematurely in Bangladesh, and 30% have low birth weight (LBW), with a total population of greater than146 million people, including 20 million children greater than 5years of age, large, un recognized populations may be at risk for neuro developmental morbidity, particularly considering that 85% of deliveries occur at home, often with no skilled care; only 7% of birth are ever registered (Marellaet al, 2015). Cerebral palsy issues a condition that leads to child disability and the prevalence of CP was 2.11 per 1000 livebirths (Oskouietal., 2013) and is the most common physical disability of childhood with disorder so movement and posture that are also often accompanied by associated impairments and secondary musculoskeletal problems (Mcintyre, et al 2012). Cerebralpalsy (CP) is more common in males than in females, but there as on for this disparity are uncertain with a male: female ratio of 1.5:1(Key,C., 2012). There are several risk factors which are directly or indirectly responsible for developing CP (Kulaketal., 2010). Prenatal events are responsible for approximately 75%, perinatalare10-15% and post natal causes are 10% of all cases of CP. In 20% to 30% of cases, there is no apparent etiologic event (Reddihough, 2011). Cerebralpalsy is the most common neuro developmental motor disability in children and requires medical, educational, social, and rehabilitative resources through out the life span(Hurley etal., 2011).

Rational of the study

Cerebralpalsy is the most common condition of physical disability in the childhood through out the world but in many cases the cause remain unknown(Robensum,R., 2014). However, there are several action that people can take before and during pregnancy, as well as after birth which might help to reduce the riskof developmental problems, including CP. In developed country the prevalence of cerebralpalsy is around 2 to 2.25 which are quite same in last few decade .However very little evidence has been found in Bangladesh perspective. There is no cure for cerebral palsy but appropriate treatment and rehabilitation can help many individual to improve their motor skills and ability to communicate with the world. So rehabilitation is

very important to restore their function to maximize their independence. So population based epidemiological studies of child hood disabilities are essential for identifying the characteristics, influencing factor and causes and needs assessment to facilitate planning of services for children and families with special needs and to make program for awareness raising and prevention of disability (Oskoui, etal2013) and provide appropriate treatment and rehabilitation facilities to ensure social inclusion into the mainstream of the society.

General Objective

To explorethe characteristics Cerebral palsypatient attended at CRP.

Specific Objectives:

-To exploresocio-demographic characteristics of children with CP.

-To identifythecommon typeofcerebral palsy.

-To describe the relevant antenatal, natal and postnatal characteristics that present amongthe patient with cerebral palsy.

Methodology

Study design: Descriptive Cross sectional study design was undertaken to identify the characteristics of Cerebral palsy patient attendedat CRP. Study Site: this studywas done at Pediatric Unit of Centre for the Rehabilitation of the Paralyzed (CRP), Savar,Dhaka as CRP is one of the specialized rehabilitation centers for those types ofchildren. This study was started from November 2015 with protocol preparation and has finished with submissionof final report in May2016. Study sample: 205 samples were selected through convenience sampling from the population for this study from the Mother who has children with cerebralpalsy and have been receiving intervention at pediatric unit (both as inpatient and outpatient service) CRP, Savar.

Inclusion criteria

- Children with Cerebral palsyanddiagnosis was confirmed by pediatrician.

- Mother who has childrenwith Cerebral Palsy age below12 years.

- Interview has taken only from them who was willing to participate int he study

- Mother who has been receiving intervention (for their children) at paediatric unit from January2016 to March 2016.

Data was collected through the face-to-face interview with semi structure mixed type questionnaire and was analyzed Microsoft office Excel 2007 using a SPSS 20 version software program. Ethical consideration has followed at all stage of the study and ethical approval was obtained from appropriate ethical committee.

Result

Age and Sex distribution of thepatients:

Result shows that among theparticipants (n=205) majority had age range 0-3 years (42%),where mean age was 1.96 yrs and standard deviation was 1.023. among them male participants were71% (n=145) and female were 29% (n=60). It shows that cerebralpalsy is more common in male ratherthan female.

Type of Cerebral palsy

Among 205 participants, about 91% (n=187) were spastic type of CP and 9% (n=18) were athetoid, 53% had Quadriplegia and 28% hemiplegic type is a common form of

cerebral palsy participates in this study.

Socio- demographic status: among the interviewed participants, 56.6percent (n=116) were from rural area, followed by 22% (n=45) were from urban area and 21.5% came from semi urban area. Majority of the parents were in primary and secondary level of education and a big portion were illiterate were 10%.

Maternal age: it has found that approximately 50% of them others maternal age ranged were between15-19 years and ages ranged between 20-35 years were 50%. Result found significant (p=.030) association between maternalageduring Pregnancy and typeof CP.

History of consanguineous parents: Here only 14% parents had history of cousin marriage (consanguineous parent) and rest of them had nopositive history of cousin marriage. Result did not find significant (p=0.458) association between cousin marriageand type of CP.

Health Care Services: Health care services were available to the 65%(n=134) respondent and on the other hand 35% (n=71) had no available health careservices surprisingly, 70% (n=143) mother wenttothe doctor for medical consultancy for one or two time and 30% (n=62) never visited to the doctor for treating any condition during their pregnancy period.

Maternal complication: Among the 205 mothers of this study 13.2% had suffered for high blood pressure during pregnancy, 5.4% percent had DM and 21% faced other complication during pregnancy. But 60% participants had no complication or no other diseases during that time. Another thing is thata mong these participants 19.5% had express the history of trauma in different trimesterof their pregnancy.

Gestational age and birth weight: This study shows that among the total cerebralpalsy patient 39% were born before 38 weeks of gestation (pre mature birth) and 56.6% were born after 38weeks of gestation. One fourth patients with cerebralpalsy were born withn ormal birth weight and 20.5% were born with low birthweight. But half of the children were not measured their birth weight instrumentally after birth and that was 47.8%.

Delivery status: Among the total pat ient (N=205) with cerebralpalsy, 48% children were born at home, 42 % were born at hospital and only10% were born at clinic and 73% children were born through process of the Normal Vaginal Delivery (NVD) which was mostly assessed by midwife 48%. Unfortunately 60%(n=122) Mother had historyof prolong labor which was more than12 hours of labor pain. Result shown that birth asphyxia is much more common in prolong duration of labor pain.

After birth: it has found that after birth child commonly suffer from Jaundice, pneumonia and convulsion.

Family support: among the participants, majority of the mother in formed that during their pregnancy period they got sufficient support from their family and the percent age were 62.9% (n=129). But on the other hand 37.1% (n=76) also reported that they couldn't get minimum support from their familymember during their pregnancy period.

Discussion

Thiss tudy shown that, the main type of cerebral palsy is spastic type of CP. According to tonicity. Incase of limb involvement Quadriplegia is much more common(53%) than diplegic or paraplegia. Among them 71% patient with cerebralpalsy were male and only 29% female participants. A systemic reviewed has done by Odding, etal in 2009 which shown that the majority of client with CP have the spastic syndrome in which the diplegic group is the smallest. Another study shown that Fifty-seven percent of the infants with CP were male. Spastic tetraplegia 36.61% and spastic hemiplegia 30.51% were the dominant types of CP (Kulak, etal2010). So it has found that Spastic tetraplegiais the most common type of cerebral palsy and male are more affected then female.

Result showst hat CP develops both in urban and rural area of the country but more in rural side. Beside this, educational level of the parents was all most in between primary and secondary level, even around 10% were totally illiterate. Literatures have given support to the association between disability and socio economic status (Mcintyre, etal2013) and the prevalence of acquired CP is higher among communities with poorer socio economic conditions (Sundrum, etal., 2005) due to low level of education, lackof awareness and deprived from proper health facilities. So it could be said that cerebral palsy are more common in more deprived area (Odding, et al 2009).

Study result shown that around half of them other age were bellow twenty year of age while having this children which is not recommended age to have had a baby medically. It has found that Bangladesh has one of the world's highest rates of adolescent motherhood, based on the proportion of women under the age of 20 giving birth every year. 28% of adolescent women (age15-19) are already mothers with at least one child and another 5% is pregnant (Unicef,2014) and it has found that maternal age less than 20 years was associated withi ncreased risk of both cerebral palsy and confirmed epilepsy, spastic type of CP is common in early pregnancy (Blacketal.,2012). Statistical test also did show a significant association between maternal age and type of cerebral palsy. On the other hand, Mcintyre, et al 2013 has done a study on "A systematic review of risk factors for cerebralpalsy in children born at term in developed countries" they have reported that maternal age above 40 is increased risk but low maternal age (bellow 20) was not reported as risk.

Maternal complications are responsible for having child disability especially infection during pregnancy which was concluded from Neufeld,et al in 2005. The effect of maternal infection on CP risk appears to be greater in pre term than in term infants. Literature support that the more severe the case of hypertension, the higher the risk ford eveloping CP (Doyleetal., 2009).

There are reports of a higher rate of neuro development problems 8-10 in the infants of hypertensive mothers, while a large regional study found similar rates of disability for infants of mothers with or without hypertension during pregnancy (Steyn,2013). In this study, when the mother were asked about the pregnancy complication, it has found 66% of them did not get any problem during pregnancy and rest of them were suffer for high blood pressure, diabetes mellitus, urinary infection and other. How ever it is a matter of thinking that the respondent may not understand or ignore their complication because of their illiteracy, younger age of mother or unawareness about pregnancy related complication and disability . Similar finding has emerge from the study done by Huda,et al in 2012.

They have said that measuring acute maternal complicationis difficult, particularly in populations where not all women give birth in a hospital. The number and percentage of women in Bangladesh who suffer from acute maternal complications or mediumor long-term disabilities arenotyet known.

Literature has shown, pre term birth is increasingly common in Western industrialized societies and more babies are being born at extremely low gestational age. However, more than half of all children with CP are born at term in that cases birth asphyxia, breech presentation at vaginal birth, instrumental delivery, and emergency cesarean delivery are associated with having CP (Kulak, etal., 2010). Similarly this study had shown 57% of the child was born in term and eighty children (39%) were borni n pre term. But the result were not shown significant (p=.251) association between time of child born & type of CP. Drougia,et al 2006, concluded in their study that Gestational Age appears to be inversely related with Cerebral palsy, Among the total number of participant half of the children were born in home and unfortunately 42% delivery were facilitate by untrained person. Beside this, history of birth asphyxia was found in both home and institution base delivery but more in case of home delivery. Result has shown significant (p=0.017) association in between place of delivery and birth asphyxia. Report of Unicef, 2014 explore that most births occur at home without skilled attendants which causing high maternal and child mortality, there is a high death rate of children under one month and the common cause of child mortality are infection (52%) followed by birth asphyxia/ unable to breath at birth (21%) and low birth weight/pre-term deliveries (11%), those who survive complications during child birth, many are left with disabilities that often cause them to be tested from the community. Birth asphyxia is a risk factor for cerebralpalsy which is supported by literature in previousstudy, it also recommended that birth asphyxia isa factor which could be manage or control with proper treatment by10%. Around 66% child of this study were suffered for birth asphyxia just after birth. it also found that birth asphyxia is common in children of those mother who suffered for prolonged duration of labor pain during delivery. Previous study shown, 20% of infants are born prematurely in Bangladesh, and 30% have low birth weight (LBW), unrecognized populations may be at riskfor neuro developmental morbidity, particularly considering that 85% of deliveries occur at home, often with no skilled care (Yasmeen & Azim, 2011)

Similarly, 20% children with CP in this study were born with low birth weight and unfortunately around half of the children (98 in number) were not measured their body weight after birth as they were born in home. This study explores that after birth children commonly suffer for jaundice, convulsion and pneumonia. A case control study result shown that Birth asphyxia occurred significantly more often in children with CP compared to controls. In the neonatal period, respiratory distress syndrome, meningitis

and neonatal seizures were associated with an increased incidence of CP (kulak, et al 2010).Bangladesh Neonatal and Child Health Prifile-2015 reported that in neonatal period prematurity, birth asphyxia, pneumonia and infection are the most common cause of child mortality and morbidity.

Limitation

Data was collected from one hospital and convenience sampling method was used in sample selection which limits the generalization of the study result.

Conclusion

Cerebralpalsy is the most common condition that is responsible for child disability. This study explore that spastic quadriplegic type of cerebral palsy is the most common type of cerebra lpalsy and male are mor e affected than female but the cause is unknown. The mean age of the patient attended at CRP is1.96 year whic his positive to provide early intervention to ensure proper rehabilitation program to have a good prognosis. It has observed that cerebral palsy is much more common in rural area of the country with the patient are first issue of their parents and much more common in mother of younger age. Positive birth character included availability of health care service to more than half of the participant, medical consultancy, term and hospital delivery and normal birth weight are could be progressive sign to have a healthy child .

On the other hand, illiteracy, younger motherhood, unavailability of health care facility to all, lack of awareness regarding pregnancy care, home delivery with untrained attendant could play as a contributing factor to have cerebralpalsy. Finally, education, awareness about child disability and its prevention and ensure women right can prevent the development of cerebral palsy in long term.

RECOMMENDATION

This study was conducted to explore the characteristics of cerebral palsy patient attendeda CRP, so a strong re commendation to evolve out of the context in which the study was done. So far still now in Bangladesh there is little research had been conducted about cerebral palsy including risk factor, cause, rehabilitation and prevention.That is why need to conduct more study about prevalence as well as other issue related to cerebral palsychildren.

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