

Case report

Early Intervention and Parent Counseling Give Positive Impact in Cerebral Palsy Child: A Case Report

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Abstract:

Cerebral palsy is a neuro-development disorder, management of which requires awareness of risk factors and regular developmental assessments. Committed routine follow up is necessary for cerebral palsy patient along with parental adequate knowledge. Effective timely intervention with professional guidance along with medication could significantly improve the overall condition of cerebral palsy patient and therefore would make their living relatively meaningful. Early intervention starts within first 6 months after term age. Intervention should be performed daily in home considering the importance of parent child relationship, training and counseling by professional guidance. In fact, Parental knowledge of their child's cerebral palsy is inadequate. If professionals give early intervention to the child and improve parental knowledge about cerebral palsy will empower them to help their children to overcome this chronic lifelong disorder.

Keywords: *early intervention; cerebral palsy; parental counseling; awareness; educational knowledge.*

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Introduction:

Cerebral Palsy is a common neuro-pediatric disorder with a prevalence of about 2% in high-income countries [8] and presumably higher prevalence in lower income countries [9]. A pilot study in Bangladesh in 2013 has reported prevalence of all kinds of neuro developmental disability is 7.1 percent [5].

The internationally recognized definition of CP is "Cerebral palsy describes a group of developmental disorders of movement and posture, causing activity restrictions or disability that are attributed to disturbances occurring in the fetal or infant brain" [10].

The term cerebral palsy is used for a group of non-progressive disorders that affects muscle tone,

movements and motor skills [the ability to move in a coordinated and purposeful way]. It is usually caused by brain damage that occurs before or during child birth or during the first 3 to 5 years of a children life [11-13].

This situation of developmental disorder was first described by William Little in 1862 and was known as little diseases then the term CP originated with Freud.

Cerebral palsy is the most common motor disorder among children affecting approximately 3 per 1000 live births in developing countries [6]. However, in developed countries with improved medical care the preventable risk factors for cerebral palsy, such as

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birth asphyxia, instrument assisted delivery, low birth weight, neonatal convulsions, neonatal jaundice, neonatal septicemia and ante partum hemorrhage have been largely reducing in extent. Mainly due lack of optimum obstetric and neonatal facilities in most of the country, these preventable risk factors continue to be in major problem.

In fact, cerebral palsy can't be cured, but "early intervention therapy" can help to achieve functional abilities that will give independence and improve quality of life. Early intervention opens the opportunity to provide specialized instruction and relative support, e.g., Physiotherapy, speech therapy, parent counseling, clinical psychology counseling, nutritional support, etc., which minimize the negative effects of cerebral palsy and promote optimal development over time.

Pediatricians play an important role in the identification and referral of children with cerebral palsy to early intervention programs determining goals for treatment and coordinating the services. During follow up the pediatricians monitor the nutritional level of child, the progress made with early intervention therapy, and gives advice about the associated Central Nervous System impairments which often manifest over a period of time^[11-13].

Case report:

Diya, a 9 years old girl was first admitted in pediatric department at Dhaka Community Medical College and Hospital (DCMCH) on March 11, 2016. According to the patient attendant statement, she was birthed at home with history of delayed cry. Apgar score was 2, had history of convulsive attack at the age of one and half month and that occurred repeatedly in last 9 years. She was admitted in DCMCH with history of convulsion and cerebral palsy. Previously she took treatment at Dhaka Shishu Hospital, Dhaka, Bangladesh for this complaint but not improved.

The Child Development Clinic (CDC) and Pediatric unit of DCMCH has primarily given medication to control convulsion and referred to other supportive units, e.g., physiotherapy, clinical psychology and nutrition department. The CDC team also referred Diya to "National Autistic foundation" at Mirpur, Dhaka, Bangladesh where she had received speech, behavioral and occupational therapy besides physiotherapy. Diya diagnosed as a case of Spastic Quadriplegic Cerebral Palsy with Global developmental delay and Seizure disorder.

During admission in DCMCH, Diya's main physical

problems were repeated convulsion for last 2 years, abnormal stiffness, weak muscle tone, delayed in normal developmental milestones, standing with some difficulty, bowel, bladder, eating affected and poor eye contact. She had trouble during swallowing, difficulties with ability to think or reasoning, problems with sensation, vision and hearing. CDC team of DCMCH treated Diya with two ways approach – short term and long term treatment plan along with proper diet chart given by Nutrition department according to her age and weight.

Short term treatment plan had applied on April 18, 2016 which includes control convulsion, arrange parent counseling, improve eye contact, make more responsive when name is called, toilet training and physiotherapy. Diya received breathing exercise, balancing and coordination training for sitting, standing, walking and playing practice primarily alone and then in group from physiotherapy department. Speech therapy unit gave advice to tongue movement training and tongue messaging. CDC centre advised Diya's parent to provide suggested functional positions for feeding, playing, home activities in sitting position, toilet training by using washroom, transportation - always advice for walking and last of all dressing - insist by herself.

DCMCH CDC centre also had long term treatment plan like continue anticonvulsive drug, parent counseling, provide speech and physiotherapy, vital function that involve motor skill and muscle such as breathing, bladder, bowel control, eating, learning, should be improve. Activities such as holding, grasping, reaching, manipulating an object bearing weight on the arm were also introduced and prepare the child for school.

Outcome of the Treatment

Assessment report after 1 month revealed that she had no attack of convulsion and had showed slight improvement, such as little improvement on eye contact; slight response when name is called. Initially, mother's attachment with the child was not so strong which was gradually improved. Diya could able to walk without any support more than 10 minutes. She likes to try to say and produce some meaningful words [Ammu means Ma]. She gained the capability to use washroom for toilet. She had also history of menarche at the age of 9 years with minor problem during her cycle and complaint of irregular bleeding. But her mother could manage it and she used to handle that day by day.

After one and half years [February 11, 2019] she took 4th visit and showed gradual improvement in seizure frequency, improve eye contact, was trying to give attention to surrounding environment, walking and standing ability also improved. Now she could stand more than 20 minutes at stretch. Initially she had complained of trouble in swallowing but now she could eat solid food also. Our Doctors prescribed Tab Barbit 60mg, Tab Valex 200mg, Tab Neurolep, Tab Folison 5mg, Tab Bicozin during discharge.

Earlier she had communication problem with her mother which is now improving gradually, but not more close than that of her father and brother. Advised her mother to give quality time to Diya to improve the relationship. Her parents told us that they had facing problem to give Diya physiotherapy support due to difficulty to reach therapy centre and we advised them to search reachable area and trying to get service. Last one and half years she didn't receive any service physically from Dhaka Community Hospital and Medical College due to Corona pandemic condition but her parent gave good in house support according to her need in consultation with relevant doctors.

Discussion:

Research found that cerebral Palsy can be diagnosed in the first 12 to 18 months of life except in its mildest forms. Though majority of parents had noticed a delay in developmental milestones and abnormal muscle tone in their child before first birthday but in almost one third of cases diagnosis was not made till they were above two years of age. A study revealed that the figure is almost 34.6 percent^[14].

Parental adequate knowledge about cerebral palsy is also important for the treatment of a cerebral palsy patient. Educational intervention could significantly help to improve the parent knowledge about the causes and mitigation of cerebral palsy - that it is a non-progressive disorder; that although it is a lifelong disorder it is treatable; that therapy sessions are necessary twice or thrice weekly for a period of one to three years; that cerebral palsy can be prevented from occurring in next child if the mother takes regular antenatal care and delivers in a good hospital; that the importance of follow up regularly with a pediatrician for the monitoring their children general health and development.

As the patient had difficulties in communication and cognition, mainly clinical psychologist worked with the child's parents that were parental counseling. In

the assessment it was found that there were several mental health issues regarding this case. Father had better acceptance than mother about the disorder. Several sessions were given to the mother to accept her daughter's disorder and to understand that it's her lifelong journey. There were also some couple issues and father's legal and safety related issues which were also discussed in the session. Then it had been followed up for three times with standard time interval. At the last visit of assessment, it was noticed that there were some positive factors, such as, acceptance of the child's disorder by both parents, making plans for child playing time, and above all they became well-motivated to be with the child. Parent was disclosed few challenging factors related with life style including sudden change of accommodation, child's sexuality and menstrual cycle and other some stress factors etc. Proper counseling was given to both parents to effectively deal with these challenging factors.

As a part of assessment techniques - clinical interview and psychometric assessment scales [depression and anxiety] was used by psychiatry and clinical psychology department. For this case behavioral and relaxation [breathing and progressive muscular relaxation] techniques, couple counseling, individual session with parents, stress management training etc. were also successfully provided.

At the end, it can be concluded that, at the last visit there was significant visible improvement both in the child and parents. Parental acceptance and motivation made the child more functioning. Diya's eye contact level, physical movement, attachment with mother was improved. So it can be said that, integrated medical and psychological support worked effectively for this case.

Limitations:

Global impact of COVID-19 pandemic primarily constrained this study by creating difficulty in reaching to the patient physically. However, the study was continued through social media communication platforms, such as, messenger, Facebook, WhatsApp, etc.

Conclusion:

We would like to believe that our applied intervention could have inspired the parents to learn more about cerebral palsy. All the members of the team are very pleased to see Diya's progressive responses. The outcome of home program provided by the CDC teams for both of the parent & patient to follow

was found fruitful. Smile of her parents' face gave us great encouragement. CDC team could bring self-confidence to her parents. Proper counseling helps the parent to strengthen their mental strength. Parents didn't assume her to be a burden. Now they tried their best to give normal life and living to Diya and will do in future - parents committed to the Child Development Centre team.

Recommendations:

Child with cerebral palsy should be constantly monitored for progression of neurological symptoms. Appropriate monitoring will be allowed early diagnosis, proper intervention and treatment, and counseling and motivation to the parent and patient - it will give to positive impact in cerebral palsy child.

Key messages:

Following key messages were found from this study:

- a. Monitoring of neurological symptom is of utmost importance.
- b. Parental adequate knowledge about cerebral palsy is important for the treatment of a cerebral palsy patient.
- c. Educational intervention could significantly help to improve the parent knowledge about the causes and fight with cerebral palsy.
- d. Commitment and routinely follow up with effective participation of cerebral palsy child and their parents is very important.
- e. Timely monitoring will indicate positive and negative progression of child's condition.

- f. Timely monitoring will prevent worsening of child's health.

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Conflict of interest:

We, the authors, declare that there have no potential conflicts of interest regarding this article.

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Authors' Contribution:

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