A STUDY ON CLINICAL PROFILE AND RISK FACTORS OF CEREBRAL PALSY

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ABSTRACT

Cerebral palsy (CP) is the most common congenital neurological disorder. The etiological and the risk factors are many and an awareness of the interplay of multiple factors in the causation is crucial. The aim of the study is to investigate the clinical profile and risk factors of CP children in and around Chidambaram. A retrospective cross sectional study was conducted in the Division of Physical Medicine and Rehabilitation, Rajah Muthiah Medical College and Hospital, Chidambaram. Seventy clinically diagnosed CP children were enrolled and clinical profile and history were retrieved from the case sheets and the parents of CP children. The result shows that out of 70 CP children 53% of males and 47% of females were found. The anthropometric measurements like height and weight of the CP children were found lower than the normal. Among 70 children spastic type of CP was the most common, Athetoid type (5.7%) and ataxic type (5.7%) are the least common type. This study concluded that neonatal care services in Chidambaram should be reviewed to get more attention which helps to promote early intervention and rehabilitation of CP children.

KEYWORDS : Cerebral palsy, Risk factors, Diplegia.

1. INTRODUCTION

Cerebral Palsy (CP) is a non-progressive disorders of movement and posture caused by injury or anomaly to the developing brain which represents a group of clinically heterogeneous conditions and accompanied by various co-morbidities such as epilepsy, impairments of sensation, cognition and communication[1,2]. The literatures have been reported that the worldwide prevalence of CP ranges from 1.5 to more than 4 per 1000 live births[3,4]. CP is one of the disorders which impose a huge burden on the family psychologically, emotionally, financially and socially. It could also constitute a major burden on the National health system, because it is a chronic disorder and needs collaborative efforts between many teams and organizations for treatment and rehabilitation[5-7]. The occurrence of CP has been associated with many risk factors such as prematurity, low birth weight, birth defects, neonatal and maternal infections, birth asphyxia, and epilepsy. Still the exact causes of CP have not been identified and studies proved that pre-natal and perinatal events are responsible for approximately 75% of all the cases of CP[8].

There may be variations exists in the prevalence and pattern of CP among different geographical regions, due to different etiological factors[9]. Limited studies have been explored the incidence and prevalence of CP in rural area. Population based monitoring of CP prevalence also helps to determine services needed for the affected children and their families. Descriptions about frequency of CP subtypes in the population may also helpful in predicting aetiology and risk factors. It also helps clinicians and other service providers to provide holistic care[9]. The aim of the study is to investigate the clinical profile and risk factors of children with cerebral palsy in and around Chidambaram.

2. METHODS

2.1 Study design and Settings

This retrospective cross sectional study was carried out in the outpatient department of Physical Medicine and Rehabilitation (PMR), Rajah Muthiah Medical College and Hospital (RMMCH), Annamalai University, Chidambaram. The study has been enrolled the cases of children with cerebral palsy from the period of January 2017 to January 2019. The study was approved by the Institution Human Ethics Committee (IHEC), RMMCH, Annamalai University.

2.2 Participants

In this study the total number of 70 cerebral palsy children were included, who have been coming for regular physiotherapy management in the division of PMR OPD. Convenient sampling method was chosen and the following inclusion criteria were set down: Clinically diagnosed cerebral palsy, age up to 12 yrs, both male and female children. The children with non-central motor deficits were excluded.

2.3 Study procedure:

Informed consent was obtained from the parents before collecting the data. Basic information like age, sex, height and weight were noted down. History of antenatal, perinatal and postnatal risk factors were collected from the parents through face to face interview and the semi structured questionnaire.

3. RESULTS

Descriptive statistics was used to analyse the basic characteristics of the children. Total number of 70 cerebral palsy children were included, out of which 37were boys and 33 were females depicted in fig 1. For easy computation age group were divided into four groups such as < 1 year, 1-3 years, 3-5 years, 5-7 years, and 7-12 years. Out of 70 children there are 8 under 1 year, 43 between 1-3 years, 10 between 3-5 year, 4 between 5-7 years and 5 between 7-12 years were found (fig 2). Most of the children observed between the age group of 1-3 years. The observed mean value of height (85.9±20.3) and mean value of weight (11.3±5.5) depicted in table 1. Regarding the types of cerebral palsy spastic type of CP (Diplegia 60%, Quadriplegia 21.4%, and Hemiplegia 7.1%) Athetoid type (5.7%) and ataxic type (5.7%) were observed which displayed in fig 3.

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The perinatal risk factors are more in number Pre term (37.1%), low birth weight (47.1%), birth asphyxia (48.6%), neonatal seizures (44.2%) and others (37.1%) displayed in fig 4.

Gender distribution

![Gender distribution](image)

Figure – 1 Gender distributions of CP children

Table – 1 Basic characteristic of CP children including motor function levels

<table>
<thead>
<tr>
<th>Basic characteristics</th>
<th>Mean (SD)</th>
<th>Motor function level (GMFCS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height (cms)</td>
<td>85.9 (20.3)</td>
<td>Level 1</td>
</tr>
<tr>
<td>Weight (kgs)</td>
<td>11.3 (5.5)</td>
<td>Level 2</td>
</tr>
</tbody>
</table>

Level 3 | Level 4 | Level 5
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<th></th>
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<tbody>
<tr>
<td>12</td>
<td>25</td>
<td>32</td>
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SD- Standard deviation, GMFCS- Gross Motor Function Classification Scale

INDIAN JOURNAL OF APPLIED RESEARCH
Cerebral palsy is a chronic condition which requires continuous care and service from the childhood throughout life. In this study among 70 cases 53% of male children and 47% of female children were observed, which denotes that male gender had higher incidence of CP than female gender in Chidambaram. The results of the study supported by Hagberg et al., declared that female gender showing lower risk with male gender had higher incidence of CP than female children. Spastic diplegia was the most common subtype of CP. Perinatal risk factors are associated with the incidence of CP and constitute major risk factors for CP in Chidambaram. These results help to strengthen the need of health promotion programs to improve holistic care and neonatal services.

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