CAUSES AND INCIDENCE OF CEREBRAL PARALYSIS

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Abstract: *In this paper we sought to identify the causes that caused the occurrence of neurological disorders, forms of cerebral palsy (PC). The purpose of our study is to find out the causes and incidence of brain paralysis in children. For this purpose, we aimed to carry out a research on epidemiological parameters (as risk factors in PC emergence and evolution), etiopathogenic (causal factors), and a representative group of parents whose children were diagnosed with PCs DGASPC, Bacau. For this we used a questionnaire that comprised a set of 10 questions, entirely elaborated by us, to advise parents in 30 mothers and was aimed at detecting the causes and incidence of children diagnosed with cerebral palsies.*

Key words: *cerebral palsy, causes, incidence.*

1. Introduction

In 2007, [5] said that "cerebral palsy (PC) describes a group of permanent disorders of the development of motorism and posture that cause or cause limitations in activity that are attributed to nonprogressive impairment that occurs in the development of the fetal or child's encephalopathy little". Taudorf [6] is of the opinion that the definitive PC diagnosis should be postponed until after the age of 2 years. According to Robănescu [4 p. 16] the correct name would be "sequelae of infantile chronic encephalopathies, lesional diseases of the child's brain with repercussions on brain functions, especially on motricity and psychic development."

According to international statistics, the incidence of cerebral palsy, also called cerebral disability is 2 cases per 1,000 live births. At the level of Romania, this represents approximately 500 children affected annually. Taking into account the period in which spastic lesions develop their entire clinical picture, until the age of 10 years, it can be estimated that there are about 5,000 children suffering from motor deficiencies caused by cerebral motor infirmity in Romania. Newacheck [3] estimates that over 100,000 Americans under the age of 18 have a degree of neurological disability attributed to PC. In France and England, [1, p. 121] estimated that 25% of PC patients had an important motor deficit, unable to go

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alone, and 30% mentally retarded. The American state's 5 million $ patient assistance for PC assistance is 5 million $, and for families where there is a patient with this diagnosis, the traumatic trauma and material burden are virtually invaluable.

Initially, William John Little, an orthopedic surgeon in London, cited by Freund, S., considers that the main cause of the disease, which he called a spastic diplexia, was asphyxiation at birth, given by prolonged labor. However, in 1988, Freund, S., argues that neuro-motor disabilities in general and infantile cerebral palsy in particular are the result of prenatal factors that have influenced the development of the fetus. Despite his observations and assertions, for many years physicians, physiotherapists, the family, and even scientists have been convinced that difficult birth is one of the causes of the newborn's lack of oxygen and the appearance of cerebral palsy.

Established in 1980, the National Institute of Neurological Disorders and Vascular Accidents has studied more than 35,000 newborns and their mothers and found that less than 10% of those born with cerebral palsy had birth complications. In most cases they did not find an obvious cause. Another etiological factor of cerebral palsy may be prematurity, due to the vulnerability of the newborn by insufficient organ development. This increases the risk of hypoxic lesions in the brain. Unfortunately, it is difficult to establish a differential diagnosis between cerebral palsy caused by lesions of the encephalus, hypoxia and that resulting from premature nerve injury.

2. Materials and Methods

The purpose of our study is to find out the causes and incidence of brain paralysis in children. For this purpose, we aimed to conduct research on epidemiological parameters (as risk factors in PC emergence and evolution), etiopathogenic (causal factors), and a representative group of parents whose children were diagnosed with PC.

2.1. Objectives and tasks of the research

- identification of children with cerebral palsy belonging to DGASPC, Bacau;
- identifying the causes that caused neurological disorders in the form of cerebral palsy.

This study has a number of tasks and are represented by:
- identification of the neuromotor recovery centers belonging to the General Directorate for Social Assistance and Child Protection, (DGASPC), Bacau;
- establishing questionnaires and completing them;
- identification of children with various diseases registered in the 4 neuromotor recovery centers within the General Directorate of Social Assistance and Child Protection in Bacau (DGASPC);
- identification and classification of cerebral palsy within the General Directorate for Social Assistance and Child Protection in Bacau (DGASPC);
- presentation and graphic processing of the results obtained.

In this study we used the following *research methods:*

- method of bibliographic study;
- the investigate method (the opinion knowledge questionnaire);
- the method of recording, processing and graphical representation of data.

In the investigation, I used a questionnaire to complete the research, which included a set of 10 questions, designed by me and addressed parents, counting 30 mothers, and aimed at detecting the causes and incidences of cerebral palsies.

2.2. Research assumptions

The study was based on the application of an opinion questionnaire and was aimed at verifying the following assumptions:

a. The most common causes of neurological affections are those that interfere with intrauterine development;

b. Detection and initiation of therapy to reduce deficiencies begins at a young age.

3. Research Results

In order to identify the data on the assessment of the causes and incidence of children with cerebral palsy, a questionnaire was developed and applied to the parents. The results of the questionnaire highlight the causes and incidence of cerebral palsy.

The questionnaire was completed by 30 mothers of children diagnosed with different forms of cerebral palsy and aimed at knowing the risk factors that could lead to these deficiencies.

To the question "How old were you when you were born?", We found (Table 1) that out of the 30 mothers, 20 are under the age of 20, representing 66.67%, 8 are aged between 20 and 30, which is 26.67% and 2 mothers are over age 30, which is 6.66%. It is easy to observe that the mother's age is in the highest proportion under 20 years (chart no.1).

Table 1

Results on maternal age at birth

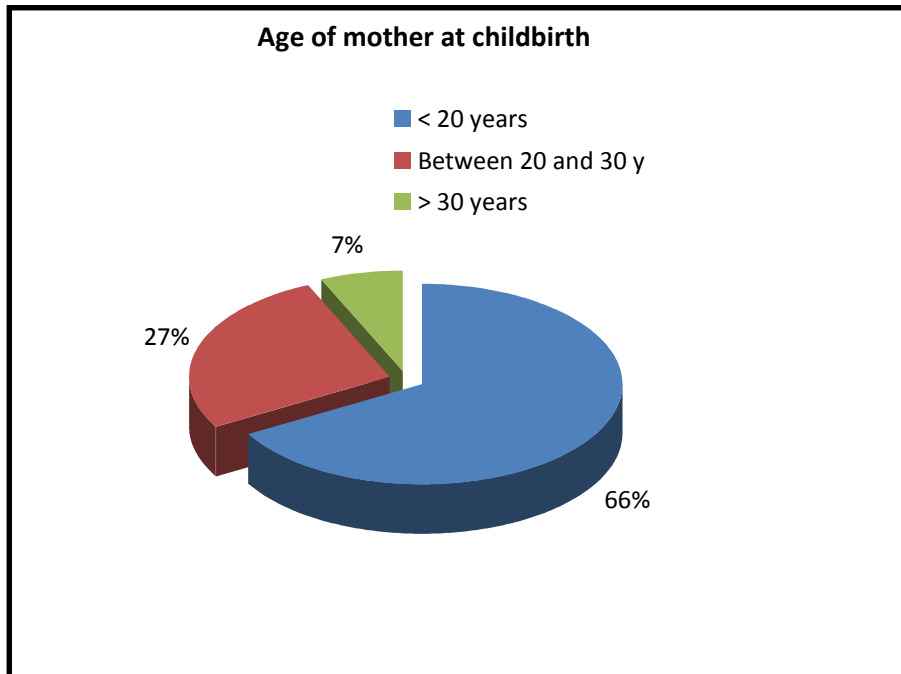| Age of mother at childbirth						
< 20 years		Between 20 and 30 years		> 30 years		Total
Years	%		%		%	
20	66,67	8	26,67	2	6,66	20

Chart no. 1. *Presentation of results on maternal age at birth*

To the question "Have you benefited from prenatal counseling?", We found (Table 2) that out of the 30 mothers, 3 received monthly consultations, representing 10%, 7 consulted once every 2 months, representing 23.33%, 11 consulted every 3 months, representing 36.67, 9 were not at all at the consulates, which represents 30%.

Table 2

Results of prenatal counseling

Prenatal counseling								
1/ month		1 every 2 months		1every 23 months		None		Total
Nr.	%	Nr.	%	Nr.	%	Nr.	%	100%
3	10	7	23,33	11	36,67	9	30	30

It can be noticed that those who have been consulted once every 3 months and those who have not been consulted are in the highest proportions (chart 2).
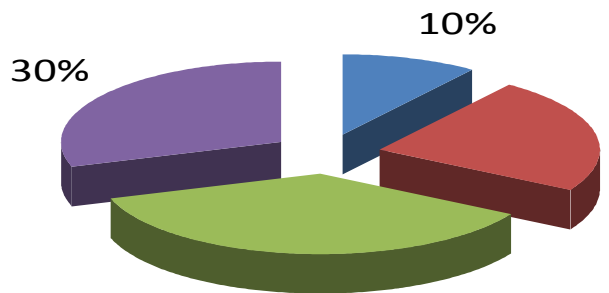
Prenatal counseling

Chart no. 2. *Presentation of results on prenatal counseling*

To the question "Have you consumed alcohol, tobacco or other substances during pregnancy?", we found (Table 3) that of the 30 mothers, 7 consumed alcohol, which is 23.33%, 21 are smokers, which represents 70%, one consumed other substances, which represents 3, 34% and only 2 did not consume anything, which represents 3, 34%. It can be seen that those who smoke are in the highest proportion (Figure 3).

Table 3

*The results on the consumption of toxic substances
(tobacco, alcohol, others)*

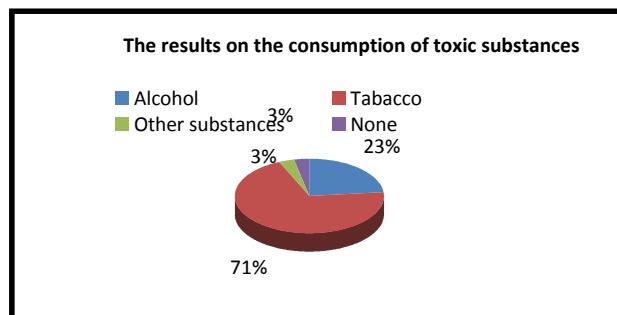| Consumption of alcohol, tobacco or other substances								
Alcohol		Tabacco		Other substances		None		Total
Nr.	%	Nr.	%	Nr.	%	Nr.	%	100%
7	23,33	21	70	1	3,33	2	3,34	30

Chart no. 3. *Presentation of results on the consumption of alcohol, tobacco, other substances, nothing*

To the question "Have you had a long labor?", I found out that of the 30 mothers, 16 had long labor, which represented 53.33% and 14 did not, which is 46.67. It is observed that those who have had a prolonged labor are in the highest proportion (Table 4).

Labor results   Table 4

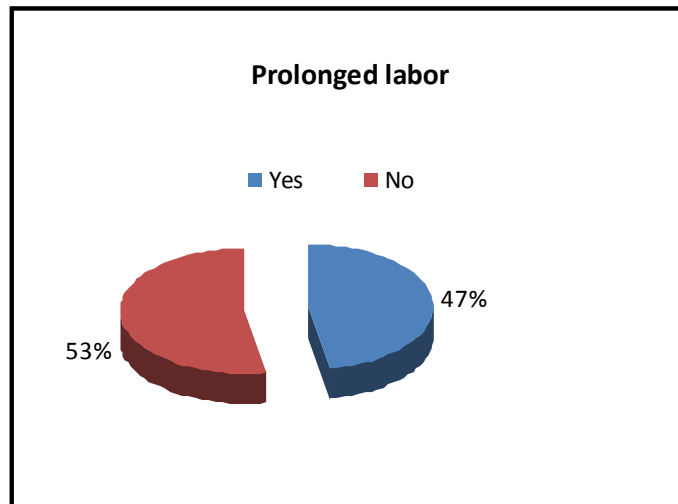| Prolonged labor				
Yes		No		Total
Nr.	%	Nr.	%	
16	53,33	14	46,67	30

Chart no. 4. *Presentation of the results for the period of work*

To the question "What was the gestational age of the child at birth?", It was found (Table 5) that out of the 30 mothers, 17 gave birth prematurely, which represents 56.67%, 10 were born in term, what representing 33.33%, 3 were born overtime, representing 10%. It is noticeable that those who gave birth prematurely are in the highest proportion (Figure 5).

Table 5
Results on the child's age at birth

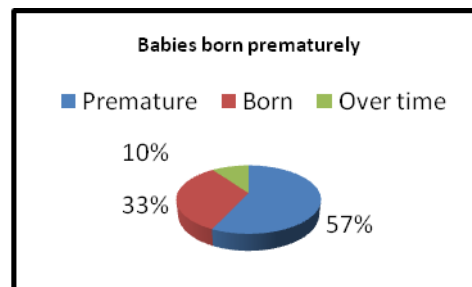| The child's age at birth						
Premature		Born		Over time		Total
No.	%	No.	%	No.	%	
17	56,67	10	33,33	3	10	30

Chart no. 5**.** *Presentation of results on premature, term, over time*

To the question "The results of the weight of the child at birth?", We found (Table 6) that out of the 30 children, 21 were below 2000g, which represents 70% and 9 children had between 2000g and 3000gr. represents 30%. It can be noticed that most children were born underweight (chart 6).

Table 6

Results on the weight of the child at birth

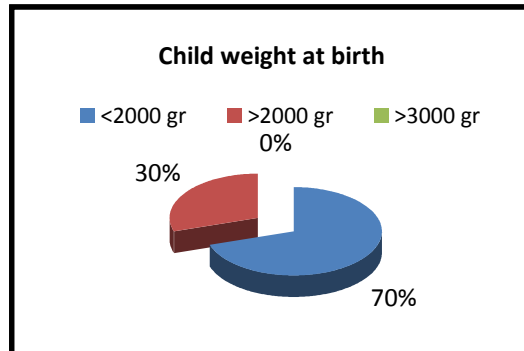| Child weight at birth						
<2000 gr		>2000 gr		>3000 gr		Total
Wt.	%	Wt.	%	Wt.	%	
21	70	9	30	0	0	30

Chart no. 6. *Presentation of results on the weight of the child at birth*

To the question "At what age was the child with cerebral palsy diagnosed?", We found (Table 7) that of the 30 diagnosed children, 4 were diagnosed under 1 year, representing 13.33%, 3 were diagnosed for 1 year, representing 10%, 19 diagnosed, representing 63.34%, 7 diagnosed, representing 23.33%. It is noted that most of the children were diagnosed at the age of 2 years (Figure 7).

Table 7

Results on the age at which children were diagnosed

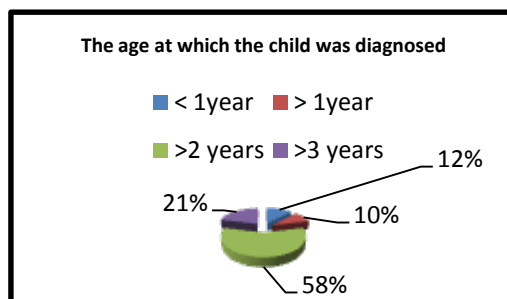| The age at which the child with cerebral palsy was diagnosed									
< 1year		> 1year		>2 years		>3 years		Total	
Nr	%	Nr	%	Nr	%	Nr	%	30	
4	13,33	3	10	19	663,34	7	23,33		

Chart no. 7. *Present the results on the age at which the child was diagnosed*

To the question "At what age did the recovery program begin?", We found (Table 8) that of the 30 children, 5 started under the age of one, representing 16.66%, 8 started over the age a year, which represents 26, 67%, 14 started over 2 years, which represents 46.67%, 3 started over 3 years, representing 10%. It is noticeable that most children started the intervention program over 2 years (Figure 8).

Table 8

Results on the age at which the recovery program started

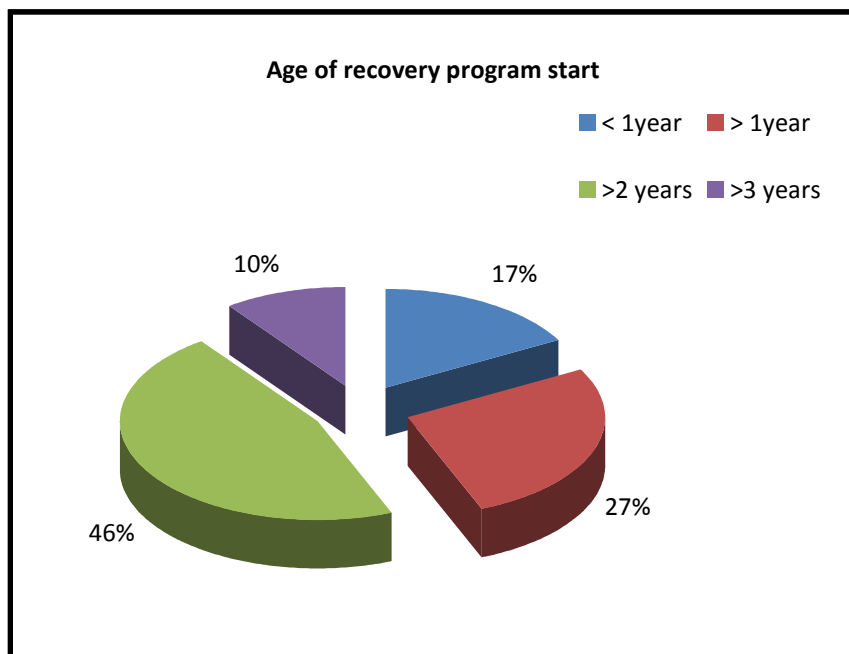| Age of Recovery Program Start								
< 1year		> 1year		>2 years		>3 years		Total
No	%	No	%	No	%	No	%	
5	16,66	8	26,67	14	46,67	3	10	30

Chart no. 8. *Presentation of results on the age at which the recovery program started*

To the question "Is the child trained? - normal school / special school / non-school?" (Table 9), that out of the 30 children, 2 are in the mainstream education, which is 6.66% special schools, which represent 20%, 22 are non-schooling, representing 73.33%. It is noted that most children are uneducated (Figure 9).

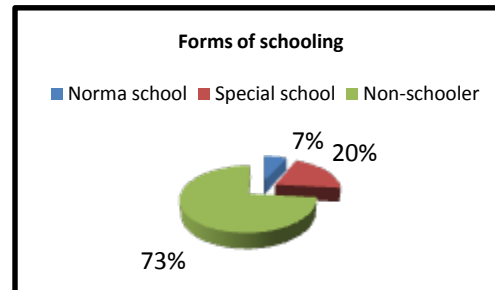|						
						Table 9
Results on Schooling Forms						
Schooling the child						
Regular school		Special school		Non-schooling		Total
Nr	%	Nr	%	Nr	%	
2	6,66	6	20	22	73,33	30

Chart no. 9. *Presentation of results on schooling*

The interpretation of the questionnaire applied to the 30 mothers, aiming at highlighting the causes that lead to neurological diseases in children, revealed that:

- in 63.33%, mothers who had premature birth;
- In 70%, mothers gave birth to children less than 2000g;
- 66.67% of mothers are younger than 20 years of age;
- in 70%, mothers consumed toxic substances, especially tobacco, which is also a cause of the birth of low-weight children;
- mothers were not concerned about following compulsory pregnancy consultations, which highlights the lack of concern about the importance of medical control on fetal and maternal health. Of the 30 mothers, only 11 were once every 3 months under medical supervision, representing 36.67%, and 9 mothers did not benefit from control at all, which represents 30%;
- in 53.33%, mothers suffer from birth due to prolonged labor, which is also a significant cause;
- in order to prognose the child's evolution in terms of functional development, we also took into account the age at which it was diagnosed, when an intervention plan and what form of education the child follows. As a result, late diagnosis could be highlighted, which slows the recovery process, which represents 67.77%. As an intervention it can be emphasized that it started over 2 years in 46.67% of the cases;
- the hypothesis that the most common causes of neurological affections are those that interfere with intrauterine development has been validated;
- the hypothesis that detection and initiation of therapy to reduce the deficiencies begins at a young age has been validated.

4. Conclusions

The study in the research allows us to highlight some conclusions about the causes of cerebral palsy.

The causes of brain paralysis in children are different, but largely depend on how mothers behave during pregnancy and during intrauterine development of children.

The use of questionnaires and tests helps specialists to know the many aspects

of neurological disorders, but also to develop effective recovery procedures.

These conclusions allow the development of therapeutic interventions aimed at increasing the functionality of the child with cerebral palsy.

References

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