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Etiologies and Risk Factors of Cerebral Palsy in 92 Children (Béni-Mellal, Morocco)

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Summary

Our sample consists of 144 people with 92 cases of palsy cerebral, (79 cases aged 3 to 18 years, 13 cases aged 19 and over). The etiology of disabilities was evaluated based on a structured questionnaire, the processing and analysis of data made by the software sphinx 2 plus. The perinatal etiologies were dominated by hypoxia in 6.3% cases, postnatal etiologies were dominated by neonatal infections such as meningitis and the hyperthermia of unknown origin in 9.7% cases, convulsions 4.2% cases, and jaundice 2.8% cases, prenatal etiologies were dominated by the low weight at birth 16.7% cases, prematurity 2.8% cases, multiple pregnancies 2.1% cases these are causes of low weight of the new born.

Keywords: Cerebral palsy; Children; Risk factors

Introduction

The cerebral palsy with an incidence of 2 children per thousand live births in the developed countries as in developing countries is the "motor handicap" the more frequent among the child [1]. This term describes a group of permanent disorders of the development of the Movement and the posture responsible of the limitations of activities, attributable to events or achieved non-progressive, located on the developing brain of the fetus or nursing infant [2] The motor disorders of cerebral palsy are often accompanied by sensory disturbances, perceptual, cognitive, of communication and behavior, secondary musculoskeletal problems and epilepsy [2], the latter which complicates the evolution of child porters of cerebral palsy in 20 to 60% of cases. However the more the driving infringement is extended, the more this rate increases, and it also increases if the child suffers from a severe mental retardation [3].

In the premature infant and the new-born at term, the lesions at the origin of a cerebral palsy are most often due to a brain hemorrhage [1] or to an anoxia ischemia, the causes are different on the basis of the periods of the appearance of these lesions, and they are of antenatal origins, perinatal or postpartum.

Materials and Methods

The equipment concerned by the investigation has regrouped the medical prescriptions, sheets of stocks of medicines and consultation registers. A consultation in psychiatry has been made during the year 2010/2011, during the course of the investigation, to assess the degree of mental retardation for persons with cerebral palsy. As well we have conducted a questionnaire among the parents of disabled people on the progress of pregnancy, childbirth, and the socio-demographic data such as, age, sex, level of schooling, birth order, etc. The analysis and processing of results have been achieved through the statistical software the sphinx 2 plus; the test used is that of Chi², this last is a statistical test of hypothesis based on a law of statistical probability.

Results

Results During the study period, we have recruited 144 patients for which the criterion for inclusion was a motor impairment. The individuals whose age was less than 18 years accounted for 55% of the sample was 79 cases, the adults 19 years and over accounted for 45% of the sample was 65 cases, the average age was 22.7 years (Table 1 and Table 2)

Table 1: Forms of motor deficiencies

Forms of motor deficiencies	Inferior to 18	19 and over	Total
Quadriplegia	29.9% (43)	11.8% (17)	41.9%(60)
Diplegia	16% (23)	19.4% (28)	35.4%(51)
Hemiplegia	4.2% (6)	5.6% (8)	9.7%(14)
Other forms	2.1% (1)	6.3% (9)	8.3%(12)
Monoplegia	2.8% (4)	2.1% (3)	4.9%(7)
Total	59.9% (79)	45.1% (65)	

Table 2: The various disorders associated with motor disabilities

Associated disorders	Frequency (%)
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Language	36.1
Unique	34.7
Epilepsy	18.1
Mental deficiency	16.0
Visual deficiency	10.4
Congenital hydrocephalus	5.6
Diabetes	4.9
Hearing deficiency	4.2
Metabolic disorders	4.2
Scoliosis	1.4
Malignant tumors of bone and cartilage of limbs	1.4
Blindness	1.4
Cleft lip and palate	0.7

The main risk factors for motor disabilities

The major risk factors of maternal during pregnancy are the maternal stress which causes enormous bleeding, the hypo- or hypertension ($p=0.01$) and the inbreeding ($p=0.004$); the small weight at birth is the main risk factor among the neonatal which the cause of the disability was unknown ($p=0.03$).

Clinical forms of PC found

The spastic tetraplegia and the spastic diplégia were the main clinical forms found respectively in 38.2 and 18.8 per cent of cases; the infant hemiplegia cerebral represented 6.3% of cases.

Discussion

In our study, perinatal hypoxia was the main perinatal etiology; meningitis, hyperthermia, convulsions and poliomyelitis were the main post-natal etiologies found; the low birth weight was the main antenatal etiology found; our results are close to those of Bediang in 2008 which found that perinatal asphyxia was the primary perinatal etiology, status epilepticus and meningitis were the main Postnatal etiologies and the main prematurity antenatal etiology. In our study, low weight at birth remains the main risk factor for birth Children with cerebral palsy born at term; it may be explained by low socioeconomic level [4] due nutrition problems, the high prevalence of infections, probably through lack of medical tests during pregnancy as well as for advanced maternal age for birth weighting less than 999 g.

It is important to know that the cause of PC can remain totally unknown (6.3% of cases in our study).

According to Cans, for 85% of cases of PC, it is of clinical forms or spasticity predominates, in a bilateral or unilateral way. A third of children with CP do not walk at the age of 5 years, and this capacity to walk is even more reduced that there are other deficits associated with the motor deficiency

In our study, the risk factors exposing PC children to make epilepsy were neonatal infections and convulsions. Mbonda et al. has found neonatal asphyxia, convulsions neonatal, and neonatal infections. Bruck et al. [5] has found antecedent families of epilepsy, and the neonatal seizures. Gururaj et al. [6] has found antecedent of hypo-ischemia, the neonatal convulsions, the state of bad convulsive, and the antecedent families of epilepsy. These different risk factors would have for consequence the occurrence of ischemic injury epileptogenic of the Cerebral Parenchyma and the cortical lesions.

Other causes of motor deficiencies in the Child were represented by the lesions osteo-articular (8 cases), hydrocephalus (2 cases), and 1 cases of spinal cord injury. These lesions may occur before during or post-natal [7].

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